

Harvard Medical Alumni Bulletin

May/June 1978



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REFERENCES:

1. Kales A, *et al:* *Clin Pharmacol Ther* 19:576-583, May 1976
2. Kales A, *et al:* *Arch Gen Psychiatry* 23:226-232, Sep 1970
3. Kales A, *et al:* *Clin Pharmacol Ther* 18:356-363, Sep 1975
4. Dement WC, *et al:* Long-term effectiveness of flurazepam 30 mg h.s. on chronic insomniacs. Presented at the 15th annual meeting of the Association for Psychophysiological Study of Sleep, Edinburgh, Scotland, Jun 30-Jul 4, 1975

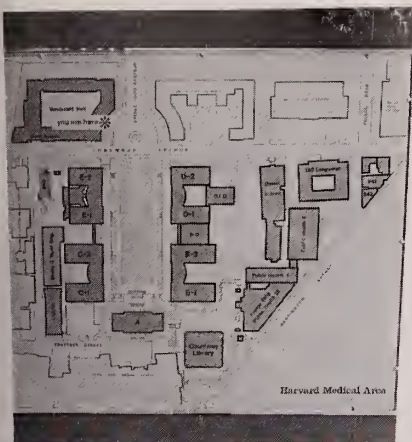


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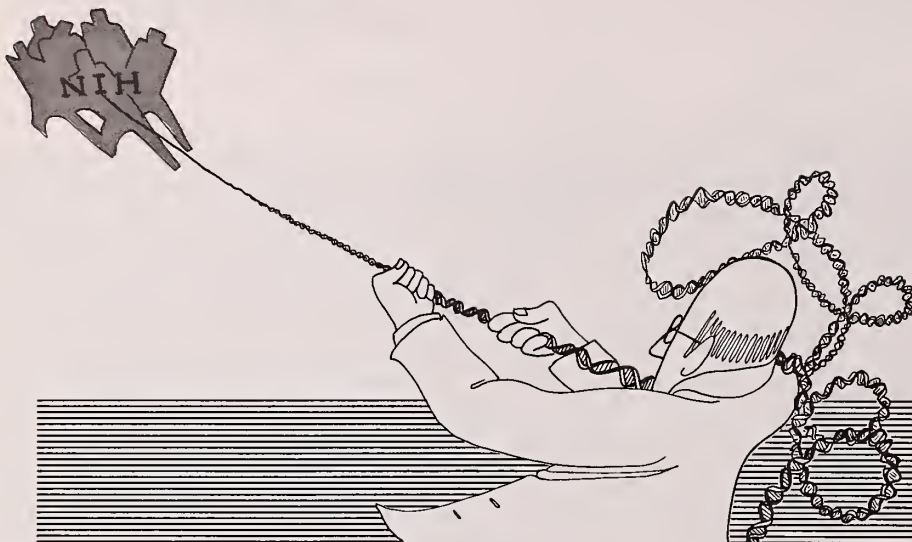
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bottom), Bradford Herzog; cover and pp. 17, 20, 26-29, 31, 33, 35,
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Overview



The recombinant DNA imbroglio

In a report released on April 17, 1978, an ad hoc University Faculty Committee investigating the alleged misconduct of recombinant DNA research in the laboratories of Charles A. Thomas, Jr., professor of biological chemistry at HMS, concludes that while the research violated certain requirements of the National Institutes of Health, it was conducted under safe conditions. The committee was appointed by Dean Daniel C. Tosteson in December 1977, shortly after the NIH refused to fund Dr. Thomas's current recombinant DNA work, pending investigation of his prior compliance with NIH guidelines for such research.

Although Dr. Thomas was a proponent of the opinion that there are no risks associated with any recombinant DNA research, he was among those scientists who helped formulate both the first voluntary guidelines for such experiments, and the formal NIH requirements that were issued on July 7, 1976. According to the NIH guidelines, recombinant DNA work is classified into four major categories of estimated risk — P1 through P4 in increasing gravity of risk — each of which requires specific containment procedures. Since the guidelines went into effect, only P1 and P2 research has been done at Harvard. A P3 facility at the Biological Laboratories in Cambridge will be ready for use this summer, and plans are currently being made at the Sidney Farber Cancer Insti-

tute to construct a P3 facility for both recombinant DNA research and experiments involving other potential biohazards by late 1980.

On August 26, 1976, an NIH memorandum was issued informing grantee institutions of the procedures to be followed in implementing the new guidelines. Each institution was to establish a recombinant DNA committee to review ongoing and proposed projects and certify that they would be conducted in compliance with the NIH guidelines. For each project involving recombinant DNA research a Memorandum of Understanding and Agreement indicating approval by that committee was to be submitted to the NIH by November 15, 1976. It was the failure to submit this document until December 1977 that brought Dr. Thomas's research to the attention of NIH authorities.

In its report, the faculty committee found that P1, P2 and P3 experiments had been done under Dr. Thomas's direction, but that the P3 work had been discontinued by the time the guidelines and approval procedure were officially in force. P1 and P2 research continued to be conducted in his laboratory (which was eventually categorized by the HMS recombinant DNA committee as a P2 facility) until it was halted in compliance with the NIH order of December 14, 1977.

An independent investigation conducted by NIH, the results of which were also released on April 17, 1978, reached conclusions similar to those of the Harvard committee. Dr. Thomas's federal funds remain suspended, pending an NIH review of both the NIH and Harvard reports. He is currently on sabbatical at the Research Institute of the Scripps Clinic in La Jolla, California.

In releasing the faculty committee's report to the public, Dean Tosteson commented: "This review makes it clear that close cooperation and vigilance on the part of the investigator, the responsible committees, safety officers and administration of the School and of the NIH are essential. Substantial changes in administrative procedures at the Harvard Medical School and at NIH have already been made to assure that these conditions will exist and prevent the recurrence of procedural delays of the type which occurred in this case. I reaffirm the intention of the Faculty of Medicine at Harvard to comply fully with NIH guidelines and to make any further changes in administrative practices which may be required to carry out productive and safe research involving recombinant DNA."

Reprinted below are the summary and conclusions of the University Faculty Committee report; the complete texts of both this and the NIH report can be obtained from the office of Eleanor Shore, M.D., Assistant to the President, Harvard Medical School, 25 Shattuck Street, Boston, Massachusetts 02115.

This report . . . addresses three separate but related questions: 1) Was research in Professor Thomas's laboratory conducted with due regard for the safety of the public and of the laboratory personnel, as defined in the NIH guidelines? 2) Was Professor Thomas in compliance with the administrative requirements of the NIH and with the procedures of HMS during the period between July 1976 and December 1977? and 3) Why was a Memorandum of Understanding and Agreement (MUA) not submitted to the NIH until December 1977?

1) We found no evidence to support allegations that Professor Thomas conducted P3 work (higher potential risk) after July 7, 1976 when the NIH guidelines were published, and we found ample evidence that procedures in Professor Thomas's laboratory were consistent with NIH P2 (lower potential risk) guidelines. There was no evidence that work was conducted at any time in a manner that could constitute a hazard to the public or to individuals working in or near

the laboratory.

2) Professor Thomas continued P1 (least potential risk) and P2 work in the absence of an approved MUA. This was not in compliance with the NIH Memorandum of August 26, 1976. However, in retrospect, it is clear that interpretation of this memorandum varied at different universities and within Harvard. There was no general agreement on whether recombinant DNA work could continue while an MUA was under review. At that time procedures within the NIH and within the University were in the process of formulation and adjustment, and communications from and within the NIH were not always precise.

3) It appears to us that all concerned — Professor Thomas, the HMS Committee on Recombinant DNA, and the administrations of the HMS and the NIH — contributed to the delay in the transmission of the MUA to NIH. Thus,

A) Approval of a P2 facility might have been granted as early as February 1977 had Professor Thomas not insisted that his laboratory be approved for both P3 and P2 work.

B) Professor Thomas chose to give the impression to the Committee on Recombinant DNA that his funds were being withheld by NIH pending their action, when, in fact, he had already been funded. Had the Committee known that Professor Thomas had received notification of funding on January 26, 1977, its responsibility would have required it to determine if recombinant DNA work was going on without an MUA.

C) While the MUA was under consideration, Professor Thomas and the Recombinant DNA Committee were not in effective communication. Professor Thomas continued his P2 work, believing it proper to do so and believing that the Committee was aware of the continuance of this work. However, the members of the Committee testified that they were unaware that P2 work was continuing. Some members of the Committee considered it proper that such work might continue while the MUA was under consideration, but most of the Committee believed that such a continuance would have been a violation of the guidelines.

D) The Recombinant DNA Committee could not implement the NIH requirement that an MUA be on file by November 15, 1976 because of 1) the late date of the Committee's appointment, 2) the requirement for laboratory inspection prior to signature, and 3) the debate over HMS safety recommendations, which were stricter than those of NIH.

E) The Recombinant DNA Committee's dealings were not as effective as they could have been. The Committee did not put in writing to Professor Thomas their vote of March 4, 1977 denying P3 approval. There was no vote on the P1 and the P2 issues. Professor Fields testified that he informed Professor Thomas verbally of the action of the Committee on the day of the vote and in several conversations thereafter. Pro-

fessor Thomas testified that had he been formally notified of this vote he would have submitted a separate request for P1 and P2 approval. On April 5, 1977 Professor Thomas wrote to Professor Fields requesting a formal decision from the Recombinant DNA Committee, which he received in writing on June 15, 1977. Professor Fields testified that he responded to Professor Thomas's letter with an immediate telephone call but did not provide a written response until after another letter from Professor Thomas on June 14, 1977. F) The approved MUA of May 1977 for P1 and P2 experiments, covering all of the recombinant DNA work in Professor Thomas's laboratory, should have been transmitted to the NIH and not only to the private foundation that supported a postdoctoral fellow. Here again, lack of communication delayed appropriate action.

G) The Recombinant DNA Committee received notice from the Department of Biological Chemistry on July 13, 1977 of Professor Thomas's decision to leave Harvard and advised the Committee not to pursue further the question of an MUA for Professor Thomas. Because of this administrative advice the Committee ceased to consider the NIH MUA.

H) The third MUA for Professor Thomas, submitted to the Medical School on November 4, 1977 was not forwarded to the NIH until December 6, 1977, and this lapse of about a month was due to administrative questions relating to details of funding the construction work in Professor Thomas's laboratory, questions that could have been explored more expeditiously by the HMS administration.

I) Even though they had no MUA on file, NIH renewed Professor Thomas's grant in January 1977 because in his renewal application there was no explicit mention of recombinant DNA research, other than references to three papers in the Summary Progress Report. However, Professor Thomas had in March 1976 transmitted relevant information about his recombinant DNA work to Dr. Fred Bergmann at NIH. This information should have been sufficient for NIH to inquire about an MUA at the time the Thomas grant was renewed.

There were ambiguities in the rules and procedures at the time in both Federal and University circles, ambiguities which have since been resolved. Administrative procedures have been clarified in the light of experience: the NIH now requires that grants state explicitly whether recombinant DNA work is involved, and an MUA must be submitted promptly in advance of funding. No recombinant DNA work is permitted without an MUA on file with the NIH. The University committees now inform those who submit an MUA that no recombinant work is permitted without an approved MUA. The HMS Recombinant DNA Committee now reports in writing to the investigator all of its relevant conclusions and votes.

Our Committee is preparing recommendations for further procedures which will strengthen the internal regulatory process at Harvard University.

The web of misunderstanding that led to the interdiction by the NIH of Professor Thomas's recombinant DNA research could have been broken at many stages along the way by appropriate action of any of the participants. That it was not may be ascribed in the final analysis to the unprecedented nature of an untried and complicated supervisory process.

This Committee reaffirms the necessity of cooperation between biological scientists and the public that supports their research. Public concerns about recombinant DNA research are understandable and cannot be ignored. While there are honest differences of opinion among experts as to the extent, and even the existence, of the hazards involved, respect for the public interest requires cooperation with federal guidelines and with the administrative procedures needed to document compliance. Some would see governmental regulation of recombinant DNA research as unduly restrictive, but we should remember that the present guidelines are not the result of arbitrary bureaucratic decree. They were developed at the initiative of scientists, working in close partnership with the NIH. Provided that the discussion continues in an atmosphere of cordiality and mutual respect, and that gov-

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ernment regulations remain open to review and modification, the present debate on recombinant DNA research should serve to improve understanding between biological scientists, the government, and the public.

The members of the ad hoc University Faculty Committee were Konrad E. Bloch, Ph.D., D. Higgins Professor of Biochemistry and chairman of the ad hoc committee; Daniel Branton, Ph.D., professor of biology and chairman of the Committee on Regulation of Hazardous Biological Agents of the Faculty of Arts and Sciences; Walter Gilbert, Dr.Phil., American Cancer Society Professor of Molecular Biology; Edward H. Kass, M.D., William Ellery Channing Professor of Medicine; Arnold S. Relman, M.D., professor of medicine and editor of the *New England Journal of Medicine*; and Torsten N. Wiesel, M.D., Robert Winthrop Professor of Neurology; assisted by Eleanor Shore '55, Assistant to the President.

When does three equal one?

As the new Affiliated Hospitals Center buildings approach readiness, a major task facing administrators is that of consolidating the services and departments of its three component divisions. This work is now in the capable hands of William Hassan, Ph.D., who became executive vice president of the AHC on March 1, and Richard Ryan, Ph.D., the new director of planning.

Dr. Hassan, a lawyer and pharmacist, has been vice president for administration of the AHC for the past two years, as well as director of the Peter Bent Brigham Hospital since 1967. Among his accomplishments are the establishment of an office of community medicine at the Brigham, and the negotiation of a cooperative agreement with the Mission Hill community (see HMAB November/December 1977). He is a member of the faculty of medicine and a visiting lecturer in hospital administration at the School of Public Health, and has published extensively on pharmacology and medications.

Taking Dr. Hassan's place as director of the Brigham will be W. Vickery Stoughton, who worked closely with him during the past two years in the capacities of assistant director of the Brigham and assistant vice president for administration of the AHC.

Dr. Ryan, who served as acting executive vice president in the interim between the resignation of Richard Wittrup last December and the appointment of Dr. Hassan, will be up to his elbows in all the problems of allocating space and developing common management and supervision for the entire range of departments to be merged into the Affiliated. In addition to these duties, he has been made assistant dean for government health services at HMS. Working under Mitchell Spellman, M.D., the new dean for medical services, he will help formulate options for positions concerning federal and state legislation that affect the Medical School. He will also act as liaison between HMS and the five Veterans Administration hospitals and clinics with which it is affiliated, and with the funding agencies for research and health care in Veterans

Administration and Department of Defense facilities. Dr. Ryan believes that the arrangements developed by these public hospitals "could provide some models for health care delivery which will be useful for legislative bodies constructing a National Health Insurance bill."

His previous hospital administrative experience initiated him in the ways of the federal bureaucracy. During 1976-77, Dr. Ryan was director of Medical District One of the VA Hospitals and Clinics of New England, and for three years was director of the West Roxbury VA Hospital. He has been lecturer in preventive and social medicine at HMS, and in health services administration at HSPH, and assistant dean for clinical programs at HMS from 1971 to 1974.

Reproductive research

A surge in the population of young scientists can be expected at HMS's Laboratory of Human Reproduction and Reproductive Biology, thanks to an \$850,000 five year grant from the Andrew W. Mellon Foundation. The purpose of the award is to attract young scholars whose scientific work in studying reproduction will benefit by exposure to a range of related areas of inquiry, and to assist them in the early years of their careers. Each Mellon scholar will be both a member of the LHRRB and a junior faculty member of one of the basic science departments at HMS.

Underscoring the need for basic research in this area, laboratory director Kenneth J. Ryan '52 commented: "Population growth, and understanding of the natural reproductive processes that feed it, remain major global problems, while the elusive equilibrium between human needs and the availability of natural resources is being sought. As the limitations of current methods for population control are increasingly brought into question with respect to safety, efficacy, reversibility, and acceptance, it is apparent that many other safe and effective approaches to regulate fertility are desperately needed to serve the diverse people of the world. In providing an environment which will fos-

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At the LHRRB, a shared interest in human reproduction has brought together faculty members who have achieved distinction in such diverse fields as anatomy, cell biology, biological chemistry, molecular biology, endocrinology, physiology, and clinical obstetrics and gynecology.

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Donald R. Dibona: physiology in the department of medicine
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Joel M. Noe '69: surgery
Nikolas Papadakis: surgery
Richard R. Peebles: psychology in the department of psychiatry
Edward R. Shapiro '68: psychiatry
Alfred J. Sotera: prosthetic dentistry
Francis J. Twarog: pediatrics
Panagiotis C. Voukydis: medicine

Principal Research Associate

Paul Davies: medicine
Mitsuko T. Laforet: pediatrics (biochemistry)
Keizaburo Miki: microbiology and molecular genetics

Lecturer

Mitzy L. Canessa: physiology

APPOINTMENTS

Professor

Oglesby Paul '42: medicine at the PBBH
Mitchell W. Spellman: surgery
Augustus A. White III: orthopedic surgery

Associate Professor

Chester W. Douglass: dental ecology
John E. Horton: periodontology
Priscilla A. Schaffer: microbiology and molecular genetics
Edward A. Sweeney: pediatric dentistry at the HSDM

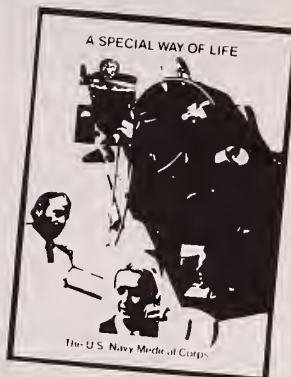
Associate Clinical Professor

John H. Fisher '46: surgery

Assistant Professor

William H. Barry '65: medicine at the PBBH
Lan Bo Chen: pathology
W. Robert Felix: surgery at the WRVAH
Carl E. Friedberg: radiation therapy (radiation biophysics) at the MGH
Leonard L. Gunderson: radiation therapy at the MGH
Ramon Latorre: physiology
Meredith Mudgett-Hunter: pathology
Arthur H. Neufeld: ophthalmology (physiology)
Gerald M. Rubin: biological chemistry
Muneyasu Urano: radiation therapy (radiation biology)

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Medical School, Study Thyself

The purpose of accreditation of a medical school by an external evaluating agency is to assure prospective students of an educational experience which meets minimal standards and to provide the public with confidence in the competency of its graduates.

The first organized move to upgrade medical education in the United States was the founding in 1847 of the American Medical Association "to promote the science and arts of medicine and the betterment of public health;" one of its prime movers was Nathan Smith Davis (ancestor of Nathan S. Davis '47, who recently completed a term on the Harvard Medical Alumni Council). While some progress was made during the remainder of the nineteenth century and the first decade of the twentieth, medical education by preceptorship, proprietary medical schools and diploma mills continued to flourish unchecked.

In 1876, twenty-two concerned medical colleges organized the Association of American Medical Colleges, which in 1890 established the standards of a graded curriculum and examinations for graduation. Between 1903 and 1906 the pace quickened toward the development of the accreditation process: both the AMA and the AAMC began inspection of member schools, the AMA established its Council on Medical Education and Hospitals, and a National Confederation of State Medical and Licensing Boards adopted the AAMC guidelines.

Nevertheless, the standards of medical education remained at generally low and uncontrolled levels, until after 1910, when the AMA commissioned the historic Flexner Survey. The AAMC and

the AMA became the two guiding lights of medical education. Their initial joint action was to amend the "Essentials of an Acceptable Medical School" to require one year of college before admission. Since then, these "Essentials" have been revised periodically by both organizations together, most recently in 1973 and 1976.

In 1942, the two associations collaborated further and established the Liaison Committee on Medical Education, composed of six members from each association. In more recent years, two public members and two student representatives have been added. In the course of the past thirty years, practically all aspects of accreditation have been delegated to the LCME. Its secretariat also serves as a source of advice and assistance to developing medical schools.

What is entailed in evaluating a medical school? Virtually everything; the institution prepares a detailed data base covering organization, administration, finances, physical plant, clinical teaching resources, students, faculty, and curriculum.

An ad hoc site survey team — selected by the secretariat from among members of the LCME as well as other experienced medical educators, including administrators, basic science and clinical faculty, and practicing physicians — makes a three to four day inspection visit of the school. Using the data base as an introduction to deeper analysis of all components, the team evaluates the strengths and weaknesses of each, and submits a report together with recommendations for consideration by the LCME as a whole. Discussion is vigorous at its quarterly meetings as members strive to fulfill their responsibility to safeguard the public interest.

Although accreditation is a voluntary process and can be entered into only by invitation from the school's chief executive officer, activities of the LCME are quasi-legal. The medical licensure laws of practically all states require that physicians be graduates of accredited medical schools, and accreditation is a prerequisite for federal funding. The US Office of Education has recognized the LCME as the agency for medical school accreditation.

The "Institutional Self-Study" became part of the accreditation process in 1976. Faculty, administrative officers, students, members of the governing body and alumni/ae of the school work together to appraise its accomplishments and offer recommendations for its development. It is an exhaustive and expensive undertaking, costing from \$75,000 to over \$100,000, once the indirect cost of faculty hours is taken into account, as well as the considerable direct costs of staffing and printing.

Whether it is worth the effort and expense depends to a considerable degree upon the attitude of those conducting the study, and of the groups they represent. A superficial study produces a worthless document that avoids addressing the institution's major problems. The process has created some serious schisms in faculties where mutual distrust and personal animosities have prevailed over objective analysis. But when all concerned are determined to explore every facet of the school, strengths and weaknesses alike, and to debate with mutual respect all issues until some reasonable recommendations are agreed upon, the self-study document serves the school well. All constituencies are able to understand the institution in ways never before possible. In addition, the document can become the foundation for continuing self-evaluation and the catalyst for improvement.

Harvard has never been through such a thoroughgoing self-analysis. From April 10-13 we were visited by the site team; our shortcomings, successes and self-assessments now will be deliberated by the LCME. Harvard has decided that its institutional self-study is a valuable document and should be made available for the alumni/ae — the first school to do so.

The Alumni Council hopes that this summary will stimulate all segments of the HMS community, including alumni/ae, to become better informed and thus more able to take an active part in shaping the future course of Harvard Medical School.

Perry J. Culver '41
Director of Alumni Relations
Member, Liaison Committee on
Medical Education

INSTITUTIONAL SELF-STUDY
OF
THE HARVARD MEDICAL SCHOOL



OVERVIEW

"The 1976-77 operating budget for Harvard Medical School and its clinical departments was roughly \$200 million"

The Harvard Medical School is the component of Harvard University devoted to higher learning in medicine. Its organizational boundaries are not clear-cut because they must reflect the diverse nature of this enterprise. The activities of the Faculty of Medicine and its students bind the School to other faculties of Harvard University, to affiliated health care institutions, and to the Massachusetts Institute of Technology.

More than 3100 people hold appointments within the Faculty of Medicine, including 290 faculty of the School of Dental Medicine. Approximately 160 tenured professors, 775 full-time and 370 part-time members with term or indefinite appointments have the privileges of faculty rank. The School also makes annual appointments to 1900 other lecturers, instructors, and assistants, some 1300 of whom work with the School part time. Forty-one departments, eight in the basic sciences and thirty-three in thirteen clinical disciplines, have the power of appointment.

The Faculty of Medicine offers courses of study leading to the M.D. and the D.M.D. degrees; participates in graduate programs leading to the Ph.D. degree in the medical sciences and to joint M.D.-Ph.D., M.D.-M.P.H., and M.D.-M.P.P. degrees; supervises the graduate education of house officers and the postgraduate education of research fellows; and conducts continuing education programs for practicing physicians. During the course of a year, 660 undergraduate medical students, 80 dental students, 145 graduate students in

the medical sciences, 1200 residents, 600 research fellows, and 10,000 practicing physicians study with the Faculty of Medicine.

From a pool of 3800 applicants, the Harvard Medical School selects 165 students to begin a four year elective course of study for the M.D. degree. The undergraduate medical curriculum includes approximately 550 courses offered by the basic science and clinical departments, and several inter-departmental committees. The only three required courses are the "Introduction to Clinical Medicine" and the core clerkships in medicine and surgery, but many preclinical courses, including a sequence in pathophysiology, are prerequisites for clinical work.

Twenty-five students in each class whose backgrounds and interests fit them for advanced study in the physical sciences and mathematics complete a special preclinical curriculum emphasizing health sciences and technology (HST). Harvard Medical School and the Massachusetts Institute of Technology created the joint HST program in 1971 to promote the application of the physical sciences, engineering, and social

and behavioral analysis to human health programs. Its administrative structure was formalized in 1977 with the establishment of an inter-university Division of Health Sciences and Technology. Up the the present, a major emphasis of the Division has been its undergraduate medical program, but this year it began graduate programs in medical engineering and medical physics. The Division is also actively exploring modifications in premedical programs at both MIT and HMS.

Within Harvard University, the Faculty of Arts and Sciences and the Faculty of Medicine share responsibility for the education of the 145 graduate students in the sciences basic to medicine. It is the prerogative of the Faculty of Arts and Sciences to award the Ph.D. degree, and that Faculty oversees the selection and training of graduate students enrolled in its Division of Medical Sciences. The Division is an administrative office that coordinates the graduate programs offered by seven basic science departments and two degree-granting committees of the Medical School. Medical students may also apply after their third term to the Division for graduate work in the medical



sciences. At present, thirty-five students are standing for both the M.D. and Ph.D. degrees. Interdisciplinary training grants and a medical scientists training grant from the National Institutes of Health provide much of the support for these graduate programs.

Members of the Faculty of Medicine oversee the graduate and post-graduate education of residents and research fellows in the hospitals affiliated with the Harvard Medical School. These hospitals currently fund and administer 66 separate residency programs in 31 disciplines. Of the 1204.5 approved residency positions, 256 are in internal medicine, 168 in surgery, 149 in psychiatry, 98 in anesthesiology, 94 in pediatrics, 71 in diagnostic radiology, and 37 in obstetrics and gynecology. Approximately 440 people hold post-doctoral appointments as research fellows in the affiliated hospitals.

The participation of Harvard alumni in medical education continues beyond medical school and the initial years of graduate training. Of alumni classes surveyed, over three-quarters are diplomates of specialty boards. More than 1300 Harvard medical graduates held faculty positions in American medical schools in 1976-77. In addition, many graduates of other medical schools who received their graduate medical education under the direction of the Faculty of Medicine in the affiliated hospitals are represented in force in academic medicine.

The Harvard Medical School offers practicing physicians a series of post-graduate courses developed by its faculty and coordinated by the department of continuing education. The 89 course offerings in 1976-77 represented the full range of medical specialties and involved faculty in most of the affiliated hospitals. The department also publishes *The Harvard Medical School Health Letter*, an effort to inform the public about health matters.

The research enterprise of the Harvard Medical School involves not only the Faculty of Medicine, but approximately 440 hospital-based research fellows, 170 postdoctoral fellows in the Quadrangle, and 350 associates. Their investigations into the unsolved problems of medicine range from the

physicochemical basis of biological functions to assessments of new methods of preventing, diagnosing and treating disease in patients. Research in the sciences basic to medicine is pursued not only in the Quadrangle, but also in the affiliated hospitals and the Division of Health Sciences and Technology. The Medical School and the affiliated hospitals respectively administer approximately \$25 million and \$50 million in federal grants and contracts.

In the course of teaching and research, physicians in the Faculty of Medicine care for patients in affiliated general and specialty hospitals and ambulatory care centers, such as the Harvard Community Health Plan. The thirteen hospitals with which Harvard has major affiliations have over 4300 inpatient beds, 130,000 annual inpatient admissions, and 900,000 annual ambulatory visits. The affiliated health care institutions range along a spectrum of private and public ownership and local to international constituencies. The Harvard Medical Center, a confederation of nine of the major affiliated institutions and the Medical School, seeks to promote coordination among these diverse institutions and to develop common bases for action on issues such as personnel policies, space sharing and leasing, patents and inventions, health legislation and regulation, governmental relations, and planning for programs and services. Its governing board consists of the President of Harvard University, and chairmen of the boards of trustees of the affiliated hospitals, and the Dean of the Harvard Medical School, who serves as the President of the Medical Center.

The Dean's Office of the Harvard Medical School oversees the educational, research, and service activities within its basic science departments, inter-departmental committees, and clinical departments as well as affiliations with the other Harvard faculties, the Massachusetts Institute of Technology, and the affiliated health care institutions. The Dean of the Faculty of Medicine, Daniel C. Tosteson, reports to the President of the University, Derek C. Bok, who, together with five Fellows and the treasurer, form the Corporation, the group entrusted with ultimate responsibility for the University. The President also receives advice from an elected

Board of Overseers which appoints a Visiting Committee to review the long-range planning of the Medical School.

The Dean of the Faculty of Medicine works with a group of four Deans responsible for different aspects of the administration of the School. S. James Adelstein, Dean for Academic Programs, is responsible for faculty organization and appointments, educational programs leading to the M.D. and Ph.D. degrees, and research. Mitchell Spellman, Dean for Medical Services, coordinates relations between the School and the affiliated hospitals, graduate and continuing medical education, government relations and health policy activities. Daniel D. Federman, Dean for Students and Alumni, manages admissions, student affairs, student advising and alumni relations. Henry Meadow, Dean for Finance and Business, administers the School's financial and physical resources.

The physical resources include the five original buildings in the Quadrangle first occupied in 1903 and subsequently extensively renovated, the Laboratory of Human Reproduction and Reproductive Biology, the new Seeley Mudd Building, the Harvard School of Dental Medicine, the Countway Library, Vanderbilt Hall, and office space in the Longwood area. The School also operates the New England Regional Primate Research Center in Southboro, Massachusetts under a grant with the Division of Research Resources of the National Institutes of Health. In all, these structures contain almost 1,000,000 net square feet of space. The affiliated hospitals offer the School's clinical departments an additional 900,000 square feet of space for teaching, research, and faculty offices.

The 1976-77 operating budget for Harvard Medical School and its clinical departments in the affiliated hospitals was roughly \$200 million. The Medical School administered directly about \$50 million of this total; the balance was under hospital control. The School supports about half of its own expenditures through federal research grants and contracts and half from private sources, including endowment income, gifts for current use, and tuition and fees. Hospital expenditures on behalf of programs of the Harvard Medical School are de-

frayed largely by federal research funds and by income generated through patient care rendered by members of the faculty.

CONCLUSIONS

Medical Education

"A mind-numbing exchange of data undermines the desire of student and teacher to learn and question together"

The Harvard Medical School has a long and strong tradition of distinguished higher learning in medicine. It is the responsibility of the present faculty, students and administration to use the institution's generous resources to build on that tradition. This self-study has helped the School to identify its present strengths and weaknesses and to begin to plot a course for the future. We have found some issues which we will address during the coming years within the following broad areas of inquiry: medical education, the natural sciences basic to medicine, the social sciences and humanities basic to medicine, clinical sciences and services, and resource development.

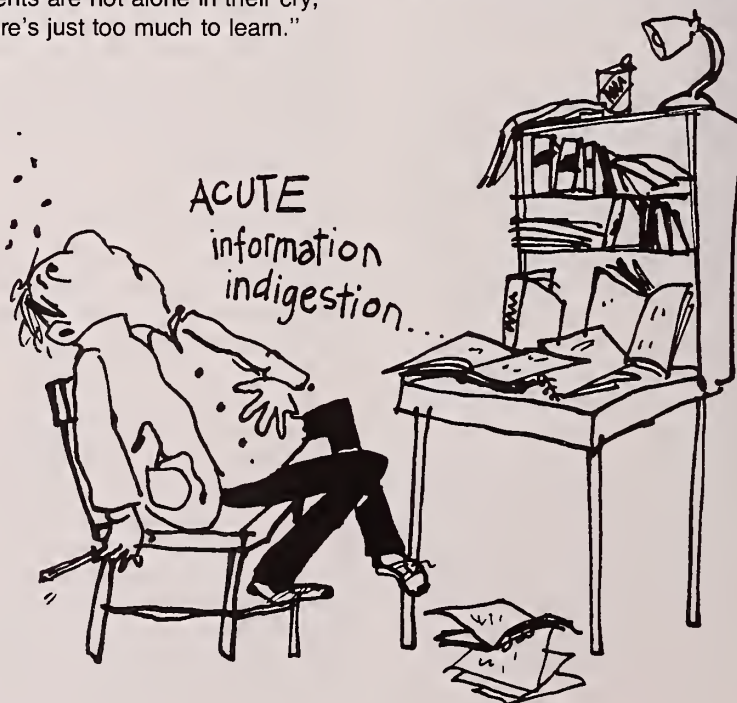
Medical education at Harvard must adapt to the increasing disparity between the mental capacity of one student and the accumulated knowledge of the medical community. The attempt to transfer massive amounts of informa-

tion to students frequently obscures the basic concepts that each successive level of education should reinforce. Trying to master detail, students fail to learn to manage information in settings in which there will always be more relevant knowledge than they can store. Worse, a mind-numbing exchange of data undermines the desire of student and teacher to learn and question together.

In this self-study, medical education at Harvard shows signs of information-induced stress. Basic science faculty, pressed for time to present expanding material in longitudinal courses, offer segments of introductory courses during block time in competition with social sciences and other electives. Clinical departments compete among themselves and with advanced basic science courses for time to give minimum preparation in each specialty. Students ask for time for synthesis and review and for help to overcome their isolation in learning. Advisors cannot speak knowledgeably about much of the undergraduate curriculum. Faculty complain about problems of "interface" between basic and clinical sciences, for no one can keep up with the investigations of interest to a given field. Struggling to keep abreast of the literature, residents attempt to teach medical students who may know more about a patient's condition than they. Beginning students are not alone in their cry, "There's just too much to learn."

Management of the knowledge relevant to medicine requires a careful marshaling of human resources. The Harvard Medical School cannot be content to shower students of medicine at all levels with rich and diverse learning experiences, but rather must help them to make careful choices about how and what they must learn and analyze. Part of the School's responsibility must be to protect and restore, if need be, the human transaction of learning. Students and faculty must encourage each other as individuals to continue to question in the face of an onslaught of data, to emphasize the opportunities and not the burdens of new knowledge. By sharing their own choices, they can guide and cheer the progress of others. To this end, Harvard Medical School is developing academic societies that would bring small groups of faculty and students together socially on a regular basis for informal discussion of their scholarly work. To avoid placing additional burdens on people's time, the societies could take over some of the existing advisory and curricular activities.

The Harvard Medical School also has the responsibility to adapt its formal programs of instruction to promote the ability of students to manage information. The School should explore course offerings in decision theory and other social sciences that will help students

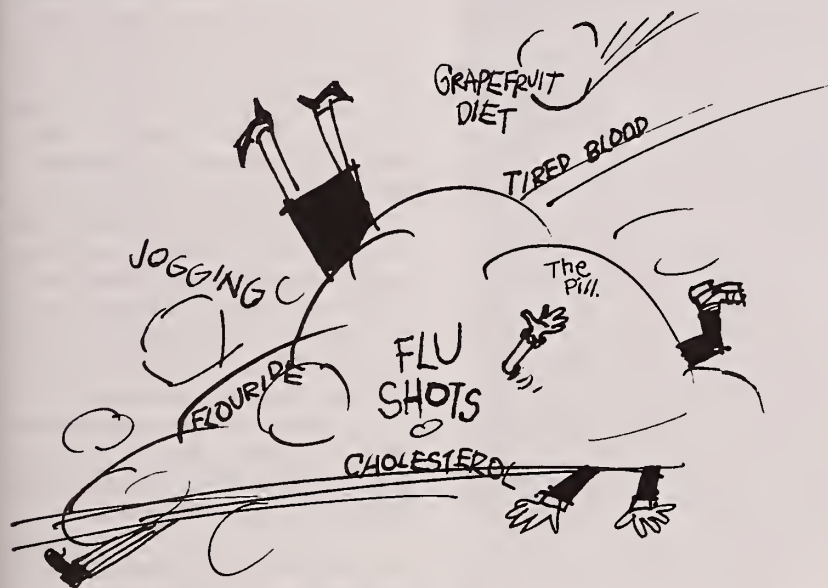


understand their own cognitive processes. To give force to evaluations of course objectives, format, content, and quality of teaching, the School must devise ways to assure revisions of courses that present obstacles to learning. The words of Walter Bradford Cannon as a medical student in 1900 are still appropriate: "With present methods of instruction, skill in logical thinking, which makes of knowledge a power, is not infrequently sacrificed or impaired by the strained effort of accumulating the very knowledge to be used."

This interdependence of all medical education places obligations on HMS beyond the boundaries of undergraduate medical education to reexamine the prerequisites for the study of medicine and devise ways to integrate the scientific training of the premedical and preclinical years. Such a study must also consider the place of the humanities and the social sciences in the education of thoughtful and humane physicians. The Medical School is fortunate to be able to build upon experiments with educational pre-

completed their formal medical education. Medical students, residents, and faculty offer each other some protection against the limitations of the individual by storing and processing information for each other. For the physician practicing outside an academic community, however, judicious reading of journals and occasional professional conferences cannot compensate for isolation. As a learning resource, Harvard Medical School has an obligation to develop meaningful continuing encounters with practicing physicians that will review basic concepts, present advances in specialized fields, and offer instruction in fields related to, but often neglected by, medicine.

If the growth of new knowledge burdens the practicing physician, it all but buries patients in an avalanche of incomprehensible information. Harvard must explore seriously ways to educate patients to assume active and informed responsibility for their own health. *The Harvard Medical School Health Letter* will contribute to this effort by making some medical news comprehensible to lay people, but the Medical School must go beyond digests of information to share with patients frameworks for making health decisions.



The growth of knowledge relevant to medicine affects all levels of medical education, not just the four year course of study for the M.D. degree. As information proliferates, it encourages new configurations of premedical, preclinical, clinical, graduate and continuing education. The image of a linear progression from college student to practicing physician becomes blurred as students double back along their way to review and synthesize new data. Teachers at different educational levels, burdened with a greater volume of information to impart, negotiate with each other for time to present their material. The resulting compromises must involve collaboration or new divisions of responsibility for instruction. The traditional compartments of medical education become more and more dependent upon each other as the set of learning choices made by students at one level determines the nature of instruction at the next.

requisites for medicine begun under the Harvard-MIT Division of Health Sciences and Technology.

The Medical School must also consider its educational responsibility for residents and clinical fellows — graduates who continue formal training in their profession. Residents stand in special relation to the Faculty of Medicine as both students and colleagues, and Harvard's review of the effectiveness of learning experiences must take into account the dual role of residents as preceptors to medical students and apprentices to faculty. The School must encourage critical reviews of training within and among specialties under the aegis of the Harvard Medical Center Committee on Residency Programs.

Efforts to develop appropriate learning transactions for the present and future state of medical knowledge may be most important to physicians who have

The Natural Sciences Basic to Medicine

"The School must act as a catalyst among investigators isolated by geography or scholarly interest"

The difficulties in applying existing information to medicine should not serve as an excuse to turn HMS aside from developing new knowledge in the biomedical and behavioral sciences.



Further investigations into the physical and chemical properties of living organisms, coupled with study of the social sciences and the humanities, will clarify and, in time, simplify conceptions of human health and disease. The discipline of the experimental method will also help the student of medicine to look beyond the empirical evidence that he or she already possesses, to develop a healthy skepticism for dogma, and to recognize sound criteria for reliability. The Harvard Medical School, therefore, renews its longstanding commitment to creative investigation.

Recognizing that science cannot flourish without the continual recruitment of individuals of demonstrated originality and achievement, the School looks forward to the appointment of the

heads of two basic science departments, physiology and microbiology, and to major appointments in genetics and biophysics. Harvard also has an obligation to help recruit and welcome distinguished investigators in the medical sciences who will join research efforts in the affiliated hospitals. The importance to medicine of the fruitful collaboration between the natural and clinical sciences in the hospital setting cannot be overstated. In times when reimbursement controls curb the financing of hospital-based sciences, the Quadrangle departments must offer support to those who would contribute new scientific insights into effective preventive and therapeutic medicine.

Appointments in place, the Harvard Medical School must act as a catalyst

among investigators isolated by geography or scholarly interest. Although the School has a special obligation to encourage members of the Faculty of Medicine in the Quadrangle and the teaching hospitals to talk to and work with each other, it must also promote collaboration with the other Faculties of Harvard University, most notably the Faculty of Arts and Sciences and the School of Public Health. In part, cooperation will result from activities that seek to remove administrative obstacles to joint enterprises, such as the University's Committee on the Biological Sciences. The more difficult task is to infect faculty with enthusiasm about the opportunities for collaboration outside their immediate disciplines. Within certain interdisciplinary areas of study, HMS must continue to promote educational and research programs through new organizational structures, such as the Committee on Immunology and the Committee on Cell and Developmental Biology. Candidates for future organizational adaptations include genetics, biophysics, reproductive biology, neurobiology, and virology. The School should also turn the talents of its faculty to creating scholarly programs that will offer lucid presentations without benumbing generalities or detail.

The study of human behavior bridges the natural and social sciences for which Harvard Medical School and Harvard University have great resources, ranging from investigators of basic phenomena in neurobiology to clinicians skilled in the systematic understanding of human psychodynamics. The School must strengthen and integrate programs in the behavioral sciences to enrich the education of medical students, to contribute to humane patient care, and to advance our understanding of the relation between health and human behavior.

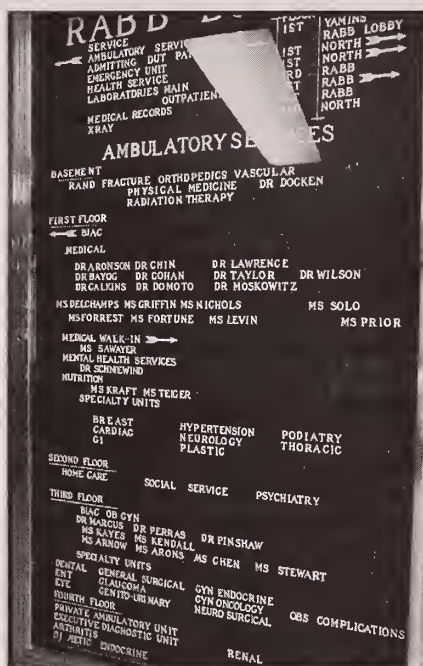
The Social Sciences and Humanities Basic to Medicine

"Physicians must help to shape social change for their own sakes and for the patients they serve"

Increasingly, it appears that Aristotle correctly argued that "Medicine begins in Philosophy, and Philosophy ends in Medicine." In this self-study, faculty and students voiced some uneasiness about the attention given to "soft" disciplines, the social sciences and humanities. One department, preventive and social medicine, has scholarly responsibility for biostatistics, epidemiology, ethics, health policy, history of medicine, medical economics and sociology. An ad hoc committee, searching for a new chairperson, is now reviewing the academic emphasis and scope of this department. HMS must make effective use of the resources represented in the School of Public Health and its Center for the Analysis of Health Practices, the new Clinical Division of Preventive and Social Medicine, and the Faculty of Arts and Sciences.

President Bok has urged the Deans of the Faculties of Medicine, Public Health, Government, and Business to develop a strong, well-organized program of research and education in health policy. Members of the Faculty of Medicine have the "hands-on" knowledge of American health care necessary to frame realistic, timely hypotheses and to adopt practical methods of inquiry. Various departments can offer the access to clinical settings for applied studies of the latest "solutions" to health care problems. Perhaps most important, the clinical faculty can educate their fellow practitioners, residents, and medical students in the habit of critical assessment of their own practice. It is important for the Faculty of Medicine

to contribute energetically and effectively to this effort. Physicians must help to shape social change for their own sakes and for the sakes of the patients they serve.



Clinical Sciences and Services

"The Medical School must promote the special attributes of each affiliated institution"

The Harvard Medical School is the hub of a vast enterprise in academic medicine. It bears a responsibility to coordinate patient care as well as re-

search and teaching activities of its clinical faculty. The present stage of development of primary care programs at Harvard offers a clear opportunity to act in this capacity. Many of the affiliated institutions are creating or building upon ambulatory services and are improving clinical training in primary care for residents and medical students. Some are undertaking research programs as well. These efforts should gain force through coordination by the School's Division of Primary Care and Family Practice, but the division, formed last year, has not yet established a role for itself.

Clinical pharmacology is another field that has not yet developed adequate expression. Despite strong support from the department of pharmacology, this discipline is not appropriately represented in the affiliated hospitals. In neither of these fields crucial to medical practice should the Medical School allow efforts to analyze and resolve problems to flounder.

Intense and pervasive pressures from local, state and federal governments are forcing the members of HMS's network to become accountable to one another. Health planning, manpower, and cost containment legislation have serious implications for both academic and service activities. Through the Harvard Medical Center, the School and its affiliated institutions must begin careful examination of possible costly redundancies. The distinctions between rich and varied soil for the growth of ideas in medicine and unnecessary duplication of services must be explained. Similarly, Harvard's clinical training programs must acknowledge the practical consequences of clinical decisions on public monies as well as on public health.

The central role of the Harvard Medical School amidst diverse clinical facilities brings with it tensions. The Medical School must acknowledge and promote the special attributes of each affiliated institution and yet develop appointment and funding policies that are equitable overall. For example, the School must help the affiliated hospitals recruit and retain good professional staffs. But hospital personnel needs may place stress on the School's criteria for academic appointments and its financial resources for salary support. The

School must continually monitor its own compromises between equity and special needs, such as the introduction of clinical full-time appointments, and propose new solutions as appropriate.

Resource Development

"During the last decade the fraction of income supplied by the government dropped from 69% to 51%"

The financial resources of the Harvard Medical School and its clinical departments in the teaching hospitals are extensive, but they are not secure. During the last decade, the fraction of income administered by the School supplied by the federal government dropped from 69% to 51%. Despite vigorous fund raising efforts, the purchasing power of the Medical School's endowment income has remained constant during this period. Increases in tuition and gifts for current use have offset the relative decline in federal support, but HMS cannot continue to expect marked growth in tuition income from students heavily in debt. Further, increasingly stringent limits on public reimbursements to the affiliated hospitals will curb funding of academic programs.

The Harvard Medical School has an urgent need to find new private financial resources, to increase the real value of

its endowment if it is to remain a vigorous private institution free from undue constraint by the concerns of contemporary society. Additional revenues are necessary not only to maintain present academic programs, but to underwrite new ones. A critical need is to increase support for tenured chairs for clinical faculty and to ensure all faculty appropriate compensation for their teaching efforts. New resources would also ease the development of interdisciplinary programs such as genetics, support renovation and construction of teaching facilities, and improve common space and housing for faculty and students at all levels.



I. OBJECTIVES OF THE HARVARD MEDICAL SCHOOL

The persons who come together in the Harvard Medical School are united by the desire for excellence in higher learning in medicine. Higher learning happens in many contexts: in formal programs of undergraduate, graduate or continuing medical education, in the course of original investigations in the laboratory or at the bedside, and in the process of caring for patients. These activities involve a large faculty and student body working in the Quadrangle and in the several independent hospitals which are affiliated with the School. A primary objective of the Harvard Medical School is to weave these many threads into a conceptual fabric which advances higher learning broadly across the entire spectrum of medicine and deeply into sciences and arts basic to medicine.

Objectives for Medical Education

The Harvard Medical School shall attempt to bring outstanding students together in learning experiences that convey the fascinating and exciting opportunities open to modern medicine. It seeks to educate physicians who will learn continually throughout their lives, who will practice their profession with high competence and who will provide leadership in their chosen fields:

More specifically, faculty, staff, and students at all levels of experience in medicine work together to —

- Train individuals in the scientific method and its application to the prevention, diagnosis and treatment of disease in individuals and in populations;
- Share knowledge and skills through teaching carefully evaluated and adapted to the needs of the learners;
- Promote excellence in clinical skills;
- Develop analytic and decision-making skills;
- Establish habits of self-assessment and inquisitiveness;
- Foster independence and self-reliance, tempered by humility and an appreciation of one's limitations;
- Assure the willingness and the ability to work cooperatively with others;
- Encourage diversity in interests and careers in medicine without compromising excellence;
- Foster ethical and humane behavior in our students and co-workers;
- Heighten awareness of the diverse social and economic factors influencing health and medical care through education offerings in a variety of public and private, urban and rural settings;
- Encourage sensitivity to the patient as an individual; and
- Educate patients as active and responsible partners in the maintenance and improvement of health.

Certain objectives relate most directly to one level of medical education.

Undergraduate education in medicine at Harvard should —

- Offer a curriculum that permits all students to acquire a basic knowledge of medicine and to pursue individual interests in depth;
- Relate the conceptual framework of medical science to patient care;
- Promote the psychological and emotional transition from beginning student to practicing physician;
- Build relationships of mutual benefit and trust between students and faculty; and
- Encourage students to assume increasing responsibility for their own education.

Graduate medical education in hospitals affiliated with the Harvard Medical School should —

- Encompass the body of clinical knowledge appropriate to the specialties of medicine;
- Prepare physicians to assume full responsibility for the care of patients;
- Offer training in methods of basic and clinical investigation; and
- Foster advances in clinical techniques and practices.



The "Objectives of the School of Medicine" compiled by the Self-Study Task Force struck our editor as rather prolix, and he followed an impulse to distill them into a shorter and more esthetically pleasing form — the Petrarchan sonnet. Readers are encouraged to devise and submit to our HMAB competition their own distillations of the School's objectives — in verse or prose. The prize: a case of excellent sherry to toast HMS.

In all our work, let Excellence be seen
 Whether we teach, administer or treat.
 Let treaters search, and searchers care, and meet
 Each problem with a mental edge as keen
 For sharing as for seeking — not serene
 To bear that what we know is incomplete,
 That while we labor to make life more sweet
 We cannot know or share what pain may mean.

If Excellence be ours, then our land
 Will listen when we feel impelled to speak
 And turn to us to give a helping hand.
 If Harvard must in some way be unique
 In lecture hall, or bench, or bedside — there
 Let Harvard's mark be that we deeply care.

— G. S. R.

Continuing medical education, conducted under the aegis of the Harvard Medical School, should —

- Recognize that medical education is a lifelong process and offer learning experiences that review basic concepts, present new developments, and offer intensive work within all specialties; and
- Continue to include appropriate educational opportunities for other health professionals recognizing that the primary objective of continuing medical education at the Harvard Medical School is the education of physicians.

The education and development of faculty at the Harvard Medical School should —

- Help young scientists to become independent through postdoctoral education in the medical sciences; and
- Prepare junior academic personnel for more advanced faculty positions with attention to their abilities as educators as well as investigators.

Objectives for Research

Harvard Medical School has a responsibility to conduct with vigor and ingenuity investigations into the fundamental properties of living organisms and into the development of clinical applications of biomedical and behavioral research. In order to assure continuing research contributions to effective preventive and therapeutic medicine, Harvard Medical School must —

- Attract to the faculty individuals of demonstrated originality and achievement who have an enduring drive to contribute new knowledge through research;
- Educate graduate and postdoctoral students in the biomedical sciences in experimental design, laboratory research methods, and literature relevant to their fields of inquiry;
- Encourage cooperation in the conduct of research among investigators within the Harvard faculty, especially the Medical School and its affiliated hospitals, but also more generally among Harvard College and other institutions; and
- Maintain a first-rate research library, laboratories, clinical research facilities, and administrative support services.

Objectives for Health Care Delivery

Superb medical education requires the corollary of superb patient care. The Harvard Medical School promotes excellent patient care in its affiliated institutions where faculty and students strive to —

- Maintain the scientific and clinical skills necessary to deliver professional services of the highest quality to patients under their care;
- Promote excellence in the delivery of primary care as well as in medical specialties;
- Help meet the needs of the surrounding community for high quality and cost-effective health care and serve as a referral center for a much wider population;
- Conduct research in methods of health care organization and delivery and in techniques for assessing the outcome of these methods; and
- Contribute to health care planning and policy making at the local, state and national levels.

Social Objectives

The Harvard Medical School bears responsibilities toward other segments of society that extend beyond its role as an institution of higher learning in medicine. To meet these responsibilities, it must —

- Encourage in each physician sensitivity and respect for each patient's individuality;
- Acquaint physicians with the social sciences and humanities which bear upon medicine;
- Select a diverse student body and faculty extending our traditional concern for excellence while giving appropriate attention to groups subject to discrimination in the past;
- Encourage students and faculty to participate in public service activities beyond the boundaries of the University; and
- Defend academic freedom and the University's autonomy in academic matters.

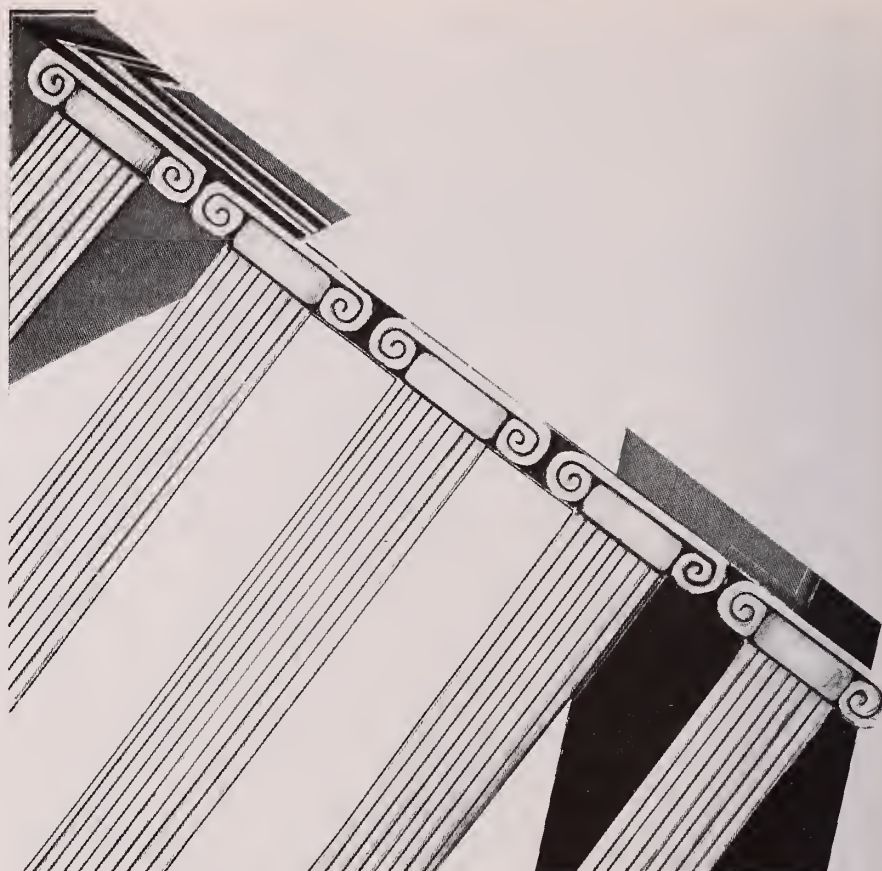
Through attention to these many objectives, the Harvard Medical School aims not only to contribute to the practice of medicine today, but also to play a role in shaping the profession and its relationship to society in future years.

II. ORGANIZATION AND ADMINISTRATION

"The proportion of Harvard administered funds to total departmental expenditures varies from a low of 1% to a high of more than 50%"

The Overview has described the highly diversified structure of Harvard Medical School. Although complex and at times awkward, relationships with local health care institutions and the faculties and administration of Harvard University give the organization flexibility, resilience, and breadth.

Harvard Medical School does not own or control any patient care facilities; instead, it has formed affiliations with a variety of private and public health care institutions with a variety of private and public health care institutions in Metropolitan Boston. On the whole, the School and its affiliated hospitals and ambulatory care centers have worked well together. There have been, however, certain discrepancies among the hospitals in the appointment and compensation of Harvard faculty. For instance, hospitals apply various criteria in their decisions to propose staff members for Harvard appointments. At some, all appointments carry with them obligatory Harvard titles, while other institutions request faculty appointments of only a portion of their staff. The Task Force notes that the School's review of procedures for appointment of clinical full-time and part-time faculty will aid in the development of a consistent policy. The affiliated hospitals have also differed in their interpretation of the types



of earnings included within the Medical School's ceilings on total compensation for faculty.

The relative financial responsibilities of the Medical School and the affiliated hospitals for the operations of clinical departments have also been at issue. Harvard hospital-based faculty have questioned whether salary support for the clinical departments is commensurate with their responsibilities for teaching and administration. The proportion of Harvard administered funds to total departmental expenditures varies from a low of 1% in one department of anesthesia to a high of more than 50% in two departments of neurology. The Task Force recommends that in determining appropriate support for hospital-based departments, the Dean should clearly state his expectations for their academic efforts and ascertain to what extent his expectations are being met. Some faculty members have also challenged the fairness of the School's allocation of indirect costs to hospitals under research grants and contracts that it administers. The Task Force notes the need for the Medical School

to inform its faculty about federal procedures for the distribution of indirect costs and reimbursement arrangements with hospitals.

President Bok has directed considerable effort within the University to foster ties between the Medical School, the Faculty of Arts and Sciences, and the School of Public Health. To this end, he appointed a University Committee on Biological Sciences to integrate the policies and practices of the three faculties. The Task Force recommends that the Medical School pursue this effort vigorously. In addition, monthly meetings of the Council of Deans offer the Deans of the three schools opportunities to discuss matters of mutual interest.

The Dean of the Faculty of Medicine is the chief executive officer of Harvard Medical School. His responsibilities include preparing the budget and overseeing expenditures, developing and implementing admissions and personnel policies, and maintaining the quality of academic and scientific programs. Within the enclave, the Dean

wields power largely through appointing committee members and administrative personnel. An elected Faculty Council hears and registers its opinion and advice on all major decisions and innovations, and the faculty at large considers important actions at its regularly convened meetings. One indication of the "viability" of the deanship may be the length of tenure of Harvard deans. Since the appointment of the first full-time dean in 1918, only five persons have held the post: David L. Edsall (1918-1935), C. Sidney Burwell (1939-1949), George Packer Berry (1949-1965), Robert Higgins Ebert (1965-1977), and Daniel C. Tosteson (1977-present).

Dean Tosteson has reorganized his office into a consortium of Deans for Academic Programs, Business and Finance, Medical Services, and Students and Alumni/ae. Although it is too early to judge the effectiveness of this organizational structure, the Task Force notes that it is more coherent, with clearly defined goals and responsibilities, than prior arrangements.

Forty-one departments with the power of appointment report to the Dean: anatomy, biological chemistry, microbiology and molecular genetics, neurobiology, pathology, physiology, preventive and social medicine, and anesthesia (4), dermatology, medicine (4), neurology (3), obstetrics and gynecology, ophthalmology, orthopedic surgery (3), otology and laryngology, pediatrics (2), psychiatry (6), radiation therapy, radiology, and surgery (5). In addition, the following divisions and academic programs are within the jurisdiction of the Dean: the Division of Health Sciences and Technology, the Division of Medical Sciences, the Division of Primary Care and Family Medicine, the Committee on Immunology, the Committee on Cell Biology, the Center for Human Genetics, and the New England Regional Primate Research Center.

The publics of Harvard Medical School include faculty, students at all levels, alumni/ae, patients, and local communities. The individual self-study reports discuss the School's relationship with all but the alumni/ae and the community surrounding the Medical Area. The Alumni Office, the Alumni Council,

and the Alumni Bulletin published six times a year serve the alumni/ae. The Task Force concludes that these efforts to communicate with alumni/ae are adequate approaches to problems that are often essentially insolvable, such as disenchantment with controversial positions taken by the Medical School or the University. In recent years, Harvard faculty have improved ambulatory services to local neighborhoods through programs within the affiliated hospitals and community health centers as well as through the Harvard Community Health Plan. The construction of the Mission Park development is evidence of the School's greater awareness of the community in which it is located.

After review of HMS's affirmative action process the Task Force concludes that its overall organization is appropriate. The procedures for appointment to associate status and training status in the hospitals need closer scrutiny, however, to ensure against possible discrimination. Noting that the computerized match by NIRMP does not in itself ensure affirmative action, the Task Force actively encourages the hospitals to follow recruitment procedures that satisfy such requirements, particularly for positions that may involve subsequent Harvard appointments. The Task Force recommends that a stand-

ing committee of the faculty be made responsible for overseeing the implementation of affirmative action, including periodic review of a sampling of new appointments.

III. FACULTY

"A faculty that could populate a small town can have communication problems"

The objectives of Harvard Medical School call for a large and distinguished faculty engaged in the diverse activities that contribute to higher learning in medicine. In the Task Force's estimation, the Faculty of Medicine is reasonably adequate in quantity and quality to carry out these objectives. Certain prob-



lem areas do remain, however. The extraordinary size of the Harvard faculty can handicap efforts to achieve objectives that rely upon personal encounters within the faculty and with students. Yet, not even a full-time faculty of 980 and a part-time faculty of 365 fully represent the scholarly interests relevant to medicine.

A faculty that could populate a small town can have communication problems. Clinical faculty often identify more closely with their hospitals than with their Harvard appointments. The number of basic science and clinical faculty and the range of their work make promotion of collaborative research and teaching ventures a problem of logistics. The size of the faculty also dilutes each member's role in forming relationships of mutual benefit and trust with students. To encourage the personal exchanges necessary to attain its objectives, the School is exploring ways to develop communities of interest that cut across disciplines and affiliated institutions. Another possible remedy might be a faculty seminar series designed to acquaint prospective collaborators with ongoing research.

Despite the current number of faculty appointments, HMS does need to recruit teachers and investigators within certain disciplines. Most notably, the School must bring scholars together within the department of preventive and social medicine to educate students in methods of disease prevention and the study of human health in populations; to offer clinical training in rural settings; to acquaint physicians with the social sciences and the humanities which bear upon medicine; and to conduct health services research.

A substantial increase or reduction in the Medical School's operating income would either support or thwart efforts to strengthen weak departments, to improve communications among faculty and students, and to influence academic programs within the teaching hospitals. At present, the Medical School contributes to departmental budgets mainly through salary support for a small number of full-time faculty and for clerical assistance. A reduction in this direct support could erode the loyalty of some members of the faculty to the School's teaching programs.



Harvard faculty salaries appear to be competitive with the salaries paid by other medical schools, but the Task Force notes that they lag increasingly behind inflation. The School and its hospitals adhere to "Academic Salary Guidelines" which set ranges for salaries by faculty rank. Full-time faculty may receive total compensation of twice the maximum academic salary for their rank from sources such as hospital salary or clinical income. Although hospitals have differed in their handling of "deferred" compensation, the School's guidelines have produced a relatively uniform system. Harvard's dual system of compensation makes direct comparisons to national norms for academic salaries of little meaning.

The faculty participates in the governance of the School largely through membership on standing committees, such as the Faculty Council, the Committee of Professors, the Admissions Committee, the Curriculum Committee, the Student-Faculty Committee and the Committee on Animals. The Task Force concludes that the committee system, including a variety of other standing and ad hoc groups, operates satisfactorily. The Faculty Council is an elective body that receives committee reports from all but the Committee of Professors, guides the faculty and advises the Dean in the formulation of policy. Since its es-

tablishment in 1973, it has become an effective and responsible administrative unit. The Task Force notes with pleasure the Dean's intention to establish a committee representing department heads that would work in conjunction with the Faculty Council and the four deans to develop policy affecting departmental operations.

There are no special by-laws for the Medical School, an omission that does not displease the Task Force. The School adheres to the Statutes of Harvard University.

A review of the process for faculty appointments and promotions has been initiated during the last six months. In January 1978, the faculty adopted revised criteria for appointment and promotion to tenure that clarify search procedures. A review of the associate status is in progress. Because the stable membership of the Promotions and Reappointment Committee of the Committee of Professors has applied consistent criteria to non-tenure positions, the faculty perceive these criteria as reasonably clear and fair. The Task Force notes, however, that planned reviews of the clinical full-time and part-time status will be useful to define the roles of those faculty.

Faculty at Harvard and in the Boston area find no shortage of opportunities for continued professional development. Individual departments offer research seminar series, journal clubs, special rounds, and ad hoc committees on teaching while the School sponsors a number of distinguished lectureships, such as the Dunham Lectureship and the Maxwell Finland Lecture. Given the variety of programs available in this area, few departments develop formal provisions for faculty development. Harvard University makes provisions for sabbatical leave for tenured faculty only, but many non-tenured HMS faculty may work at other institutions for six to twelve months under the provisions of Research Career Development Awards or other individual investigatorships.

Harvard University administers most of the central services required by its various faculties, including personnel, payroll, maintenance and repair, renovation, and purchasing. Although the Medical School lacks direct control over these services, it has contributed to some improvement in them over the past ten years. Joint efforts to improve maintenance and renovation services are still in order.

The sources of the income administered by the School have shifted during the past five years. While expenditures climbed from \$40.5 million in 1972-73 to \$50.7 million in 1976-77, federal funding dropped from 63.6% to 51.9% of total income. To compensate for this relative decline, gifts for current use rose from 12.8% to 16.4%, tuition and student income from 7.4% to 10.0% and other receipts from 4.8% to 7.4% of the total income. Endowment income hovered around 14% of total income throughout this period.

Direct expenditures of the Medical School grew, in large part, with the addition of faculty, staff, and resources to existing programs, rather than for the development of new activities. The exceptions to this rule have been the Health Sciences and Technology Program, the Division of Primary Care and Family Medicine, the Laboratory for Human Reproduction and Reproductive Biology, and expanded community psychiatry programs. In 1976-77 the proportions of expenditures were: basic science departments, 31%; clinical departments, 35%; general administration, 6%; maintenance, 6%; renovations and alterations, 5%; share of university expenses, 1%; Countway Library, 2%; student aid, 5%; and other expenses, 8%. About 46% of total expenditures was for personnel compensation.

Although the financial resources of Harvard Medical School are extensive, most of the income administered by the School has earmarks on its use. Sponsored programs, largely federal research grants and contracts, accounted for more than half of income in 1976-77. Only about \$6 million of the \$50 million total came from unrestricted endowment income and gifts, capitation, tuition and fees, interest and miscellaneous income. Monies from restricted endowment income, reimbursement for overhead, and the biomedical research support grant carry limitations as to use, but the School can exercise some flexibility in this regard.

In order to sustain the excellence of current programs, HMS must raise additional unrestricted income to keep pace with costs. Research funding and restricted gifts will probably increase with or exceed slightly increases in the cost of living. Yet, endowment income and unrestricted gifts will not rise at a comparable rate. During the past ten years, annual increments to the endowment averaged 3.5% while the average rate of inflation was more than 5.5%. To help defray institutional expenses, the School has resorted to major tuition increases, 17% in the last year alone. The School cannot continue to expect rapid growth in tuition income. Nor can the hospitals afford to bear a larger proportion of academic expenses within the stringent limits of their reimbursements. The Task Force concludes that energetic efforts are necessary to develop a more stable financial base.

IV. FINANCES

"The School cannot continue to expect rapid growth in tuition income"

The 1976-77 operating budget for Harvard Medical School and its clinical departments in the affiliated hospitals was approximately \$200 million. The Medical School administered directly about \$50 million of this total; the balance was under hospital control.



Without a substantial increase in institutional funds, HMS may have to balance its budget by charging the expenses of more functions to sources of income other than institutional funds or reducing or eliminating programs and services not productive of income or deemed vital to the support of academic programs. There does not seem to be much hope, however, of reducing the costs of federally-mandated regulatory programs, such as occupational safety, affirmative action, protection of human subjects, animal management, access for the handicapped, recombinant DNA monitoring, and accounting requirements. In addition, the sheer size and complexity of the Harvard Medical School calls for improved management and accounting systems. To avoid higher costs later, the School must also undertake improved maintenance and renovation of its physical plant.



A real decrease in operating income would lead first to "across the board" reductions in expenditures from unrestricted funds and next to a detailed consideration of the most desirable new balance of activities. Whatever the reduction, the School would attempt to maintain salary levels adequate to attract and retain high quality personnel.

A substantial permanent increase in income could permit HMS to make the faculty appointments and to support the salary levels necessary to strengthen

academic programs in the basic medical and clinical sciences. Efforts to improve communications among faculty and students through academic societies, additional research opportunities for students, and seminar series for faculty could be financed as well. Improvements in administration, support services, and facilities would have high priority. Additional income could also slow the rate of tuition increases and increase student financial aid.

V. PHYSICAL PLANT

"All departments report the need for more space over the next several years"

The five buildings of the Quadrangle, constructed in 1903, house most of Harvard Medical School's teaching facilities. This teaching space is inadequate in quantity and often ill-suited for its purpose. Too few rooms seat 10-50 people; thus, large classes break into discussion groups in corridors, faculty offices, and library reading rooms. There are no rooms that seat 125-175 people, the size of the audience for many popular seminars. While the three 260-seat amphitheatres accommodate the larger courses and most public meetings, their steep slope presents a hazard. Neither the amphitheatres nor the medium sized lecture rooms were designed for easy viewing of projected materials. The medical area as a whole could use a large, well-designed amphitheatre for popular events including continuing medical education courses.

At worst, teaching laboratories are too small, outmoded, and in poor condition. At best, they are attractive, well-lit and well-ventilated, but overcrowding, insufficient equipment and poor visibility for demonstrations are serious drawbacks. Dissecting rooms have awkward locations, poor ventilation and lighting, and outmoded furnishings. Two laboratory courses in pathology and microbiology offered by the Division of Health Sciences and Technology cannot be accommodated at the Medical School at all; the School of Public Health has made space available temporarily.

Renovation of Building E could correct the most serious deficiencies in teaching space by consolidating laboratories near support and audio-visual services, replacing laboratory facilities in Building A and rebuilding dissecting rooms. Renovating space in Building C could make it more appropriate for the teaching of physiology. The Task Force acknowledges that these renovations would be expensive with no readily available funding, but it recommends that the Medical School actively explore them, as well as consider the future of laboratory teaching in the curriculum. The Task Force also recommends that planning begin for self-teaching facilities and small seminar rooms with amenities such as cloakrooms, toilets, telephones, paging service and catering facilities.



If appropriately renovated, office and research laboratory space in the basic science departments appears to be generally satisfactory to house existing programs. Although several departments have space enough for future expansion, all report the need for more space over the next several years. In addition, continued development of interdisciplinary programs and expansion of teaching space on the Quadrangle will create demands for new construction.

Faculty, students, and staff all would favor the development of common space at the Medical School, especially an eating facility appropriate for informal meetings. The cafeterias in the School of Public Health and the nearby hospitals are too noisy, crowded, or restricted in use. Faculty are particularly interested in a faculty club that could offer sleeping accommodations for visiting lecturers and consultants. At this time, the Medical School lacks an appropriate location for such an establishment, and the funding to subsidize its operation.

Harvard has limited access to all its facilities in order to cope with an increasing crime rate over the past few years. Individuals must show identification at central entrances, but students, faculty and staff are issued keys to their own buildings. Most offices and laboratories are available to workers and students outside of the usual hours. Although security precautions are annoyances, they have resulted in a dramatic decrease in crimes against persons. Thefts have remained stable.

The animal quarters require replacement and some minor renovations. In 1973, the American Association for Accreditation of Laboratory Animal Care cautioned that "several problems were found at the main campus facilities in Boston which if not corrected could jeopardize maintenance of full accreditation in future years." Since the 1973 report, new animal space has become available in the Seeley G. Mudd and LHRB Buildings. Harvard has sought funding from the National Cancer Institute to demolish the B-D Animal Farm and the Division of Infectious Diseases and replace them with a 25,000 square foot animal facility for cancer related research. Renovations



for less extensive animal quarters in other buildings are intended. Although the animal facilities in Southboro are adequate, there are plans to add horse stalls and a new farm kennel building and to relocate trailers for small animals.

The print holdings of the Countway in the medical and biomedical sciences are probably unequaled by any medical school or university library. The range of listings and the completeness of reference and scholarly works offer students and scholars easy access to direct sources. In order to maintain this extraordinary collection, the Task Force recommends that the Acquisitions Librarian and the Library Advisory Committee seek the advice of faculty and students in reviewing new acquisitions and replacements. Faculty and students can advise on the usefulness of current holdings, such as the 5,000 periodicals on subscription, as well as on future directions for acquisitions in newer fields of science.

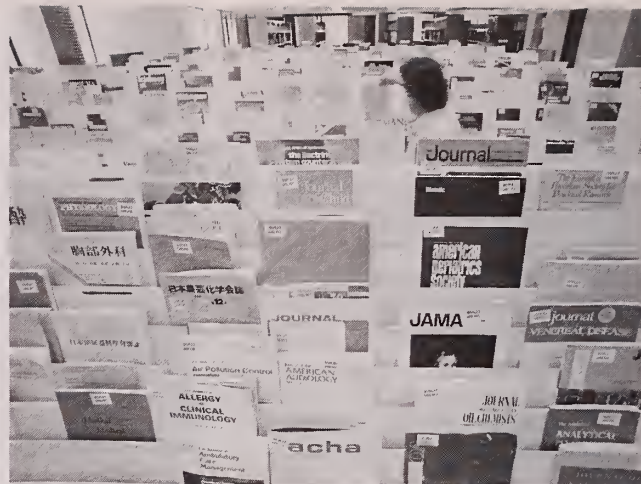
VI. LIBRARY

"The print holdings of the Countway in the medical and biomedical sciences are probably unequaled"

Students and faculty may call upon the resources of the Countway Library of Medicine, the Bowditch Library, the Schering Foundation Library, and the University libraries in Cambridge. This network offers convenient access to collections of extraordinary breadth and depth.

The Bowditch and Schering Foundation libraries offer significant and largely unduplicated print collections in biochemistry and physiology and health care organization and delivery, respectively. The Task Force recommends that the Countway Library cross-catalog these collections to ensure their best use.

Although the self-teaching facilities in the Countway Library (Porter Room) are well-equipped with audiovisual hardware, these quarters are not suited to their current use, lacking divisions to aid self-study. Students juggle equipment around trailing wires, storage space for software is inadequate and maintenance is difficult. The Office of Teaching Resources places the



audiovisual materials for teaching purposes on reserve in the Countway, which takes no active part in the management of these slide carousels, tape players and teaching machines. The audiovisual division of the Office of Teaching Resources is an effective operation, but Harvard's collection and display of these materials need considerable improvement to rival the excellence of its print holdings. The Task Force recommends that HMS undertake these improvements in consultation with the library.

Volumes and periodicals are easy to obtain; most are in open stacks with pleasant reading areas nearby. The staff is readily available for assistance. The library maintains a reserved shelf of printed and audiovisual material for coursework, and staff consult with faculty to meet changing needs and special circumstances. To assure continuing convenient usage, the Task Force suggests that the library review its staffing and hours, particularly with regard to early Friday closings.

VII. CLINICAL FACILITIES

"Students can never see enough of the senior clinical faculty"

The objectives of Harvard Medical School state clearly that superb medical education must take place in the context of superb patient care. Patients may seek primary care at local health centers or in the ambulatory care services of the seven general hospitals: the Massachusetts General, Peter Bent Brigham, Beth Israel, New England Deaconess, Cambridge, Mt. Auburn and West Roxbury Veterans Administration hospitals. Two specialty hospitals, the Children's Hospital Medical Center and the Boston Hospital for Women, also offer a full range of services to their patient populations. The Robert B. Brigham Hospital, the Massachusetts Eye and Ear Infirmary, the McLean Hospital and the Massachusetts Mental Health Center complete the constellation of specialty services affiliated with Harvard. These thir-

teen hospitals, several with international reputations, draw patients from local, regional and national populations and from all socioeconomic classes. In 1976-77, the clinical facilities affiliated with Harvard had approximately 135,000 inpatient admissions and more than 900,000 ambulatory visits. Medical students and residents under Harvard faculty supervision participated in the care of over 90% of these patients.

The size and the nature of the patient population place few constraints on clinical training for the present enrollment of medical students. The elective curriculum, however, does cause seasonal variations in the number of students on clerkships, which can overburden or underutilize certain services. At one extreme, the entire second year class descends each spring on the medical and surgical services for the "Introduction to Clinical Medicine" and creates a great demand for articulate patients with uncomplicated conditions. To satisfy this demand, the HMS is making increasing use of community hospitals. Individual hospitals have also devised their own means of searching out patients suitable for teaching; an example is the patient registry maintained by the Peter Bent Brigham Hospital. At the other extreme, the number of elective clerkships available may make it difficult for a service to assemble a "critical mass" of students for formal programs of instruction. The heads of the psychiatry clerkships are pursuing ways to overcome just this kind of situation in their courses.

All the affiliated hospitals have a full-time core faculty responsible for medical student supervision as well as a large part-time faculty. Supervision of medical students varies with the interest and motivation of the instructor and the service chief. In some clerkships senior faculty are heavily involved in teaching medical students, while in others, students see tenured faculty only on occasional visits. The Task Force notes that students can never see enough of the senior clinical faculty. It recommends that the Medical School express the expectation that all faculty will teach and evaluate students.

The Task Force suggests that the availability of clinical research programs is an important factor in the evaluation of clinical resources. Many Harvard students participate in the major studies in each institution to improve care, validate medical practices, or un-

derstand disease processes. At the least, these activities create a stimulating atmosphere for students and demonstrate a commitment to question current wisdom.

Because there are not enough conference rooms near patient care facilities and suitable for teaching, "We teach in stairwells" is a frequent complaint. The Task Force recommends that the Medical School discuss the need for teaching space with its affiliated institutions, most notably those with major building plans. Most hospitals have locker rooms, sleep rooms, and study areas for students, which they may have to share with residents. The Task Force also recommends that HMS recognize the need of recently affiliated hospitals for help in coordinating their teaching activities. These hospitals would like to participate more fully in the functions of their appointing departments.

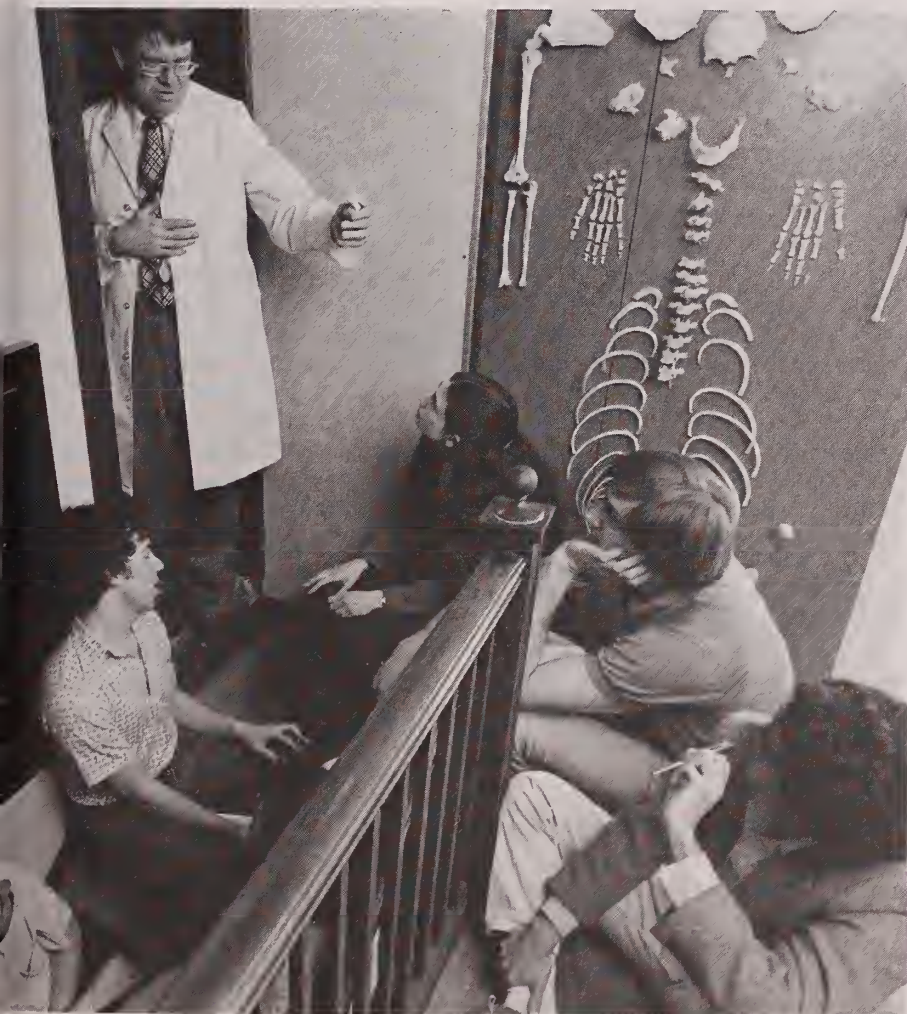
The Task Force concludes that Harvard's clinical resources are adequate for a broadly based learning experience for the 346 to 514 students who might be assigned to clinical settings at any given time; the teaching hospitals could handle modest increases in class size for third-year transfer students. Without changes in the elective curriculum, however, much larger enrollments would increase the strain caused by the "Introduction to Clinical Medicine" and particularly tax the resources of the two obstetrical services.

VIII. HOUSING

"Students and the administration view Vanderbilt as a means to improve social relationships"

Vanderbilt Hall is the Medical School's only residential facility, housing 277 unmarried medical and graduate students in single dormitory rooms. It provides a gymnasium, tennis and squash courts, several small meeting rooms, a Common Room, a dining hall, and the Medical Area Health Service.

A decline in student interest in dormitory living during the last decade resulted in a reduction of services. Students and the administration, who now view Vanderbilt as a means to improve social relationships among students and with faculty, are working together to reach practical solutions to complaints about food service, room furnishings, electrical service, maintenance, and security. The Task Force endorses their efforts, as well as those of alumni, to analyze and resolve current problems.



Harvard offers only limited assistance to married students, faculty and staff in search of shelter. The medical area community does have access to University-owned housing in Cambridge, but the distance and orientation towards the Cambridge constituency discourage all but a few. The new Mission Park housing complex is multi-income housing with a limited number of units available to members of the HMS community. Rent subsidies will be available for eligible students.

Newcomers may have difficulty finding convenient and safe housing at reasonable prices. A housing office, located in Cambridge, attempts to serve the entire Harvard community, but the majority of its listings are in Cambridge. The Harvard Medical School Financial Aid Office has made a laudatory, but necessarily limited, effort to list housing convenient to the Medical School. Additional information about the Boston side of the Charles River would benefit students, house officers, clinical and research fellows, faculty and administrative staff alike. The Task Force recommends that HMS and its affiliated hospitals establish a cooperative program to disseminate information on housing and community services.

IX. STUDENT ENROLLMENT

“Harvard has the lowest medical student to faculty ratio in the country”

Broadly stated, the mission of Harvard Medical School is to advance higher learning in medicine. The School serves the widest possible constituency



— patients, students of medicine at all levels, and research efforts across the country all may potentially benefit. Consequently, HMS supports the selection of students with diverse backgrounds and interests in medicine.

Harvard Medical School has not overcome all the difficulties in translating such lofty ideals into the choice of an incoming class. The present admissions procedures by necessity rely heavily on the students' undergraduate records and MCAT scores. Even when a large number of students receive interviews, the personal and humanistic traits that will qualify them to be excellent physicians are difficult to identify. In view of the uncertainties inherent in student evaluations, the Task Force found the present selection procedures thorough, fair and functional. However, HMS staff and faculty must continue to review the evaluation procedures and adopt needed improvements in quantitative and qualitative criteria for admission.

The Medical School has enrolled many students with the interest and the capability to pursue careers in research and teaching in the biomedical sciences. The Division of Health Sciences and Technology and the M.D.-Ph.D. program help attract such candidates to

Harvard. The Task Force notes that recruitment and admission procedures should continue to ensure the matriculation of students who will take advantage of the strong commitment of the faculty to the basic and applied biomedical sciences. The Medical School should consider strengthening the M.D.-Ph.D. program by increasing student aid and developing other programs to train academic physicians.

Current procedures have also encouraged the admission of future medical practitioners. Of the Harvard classes surveyed, more than half of the graduates responding are primarily engaged in medical practice. The Medical School's recognition of the need to train physicians in health care administration and policy is more recent. At present, some students are jointly registered at HMS and the School of Public Health in the M.D.-M.P.H. degree and at HMS and the Kennedy School of Government in the M.D.-M.P.P. program. To promote the appropriate selection and recruitment of such students, the Task Force recommends that the Medical School develop closer liaison with both these schools.

The Medical School has made progress in assembling a student body with diverse ethnic and economic backgrounds. Again, Harvard shares with all medical schools the difficult task of identifying students of excellent potential who did not have access to secondary and undergraduate education of high quality. The Task Force reaffirms the commitment to the recruitment and matriculation of students from minority and economically disadvantaged groups. This commitment should entail an improved recruitment program, including increased financial aid, and the allocation of additional resources for the compensatory training required to help some students meet their potential. The Task Force also applauds the substantial increase in women candidates accepted and endorses the recommendation of the faculty (May 1975) that “efforts be continued to increase the number of outstanding women candidates in the applicant pool so that the relative numbers of men and women in the entering class may approach parity.”

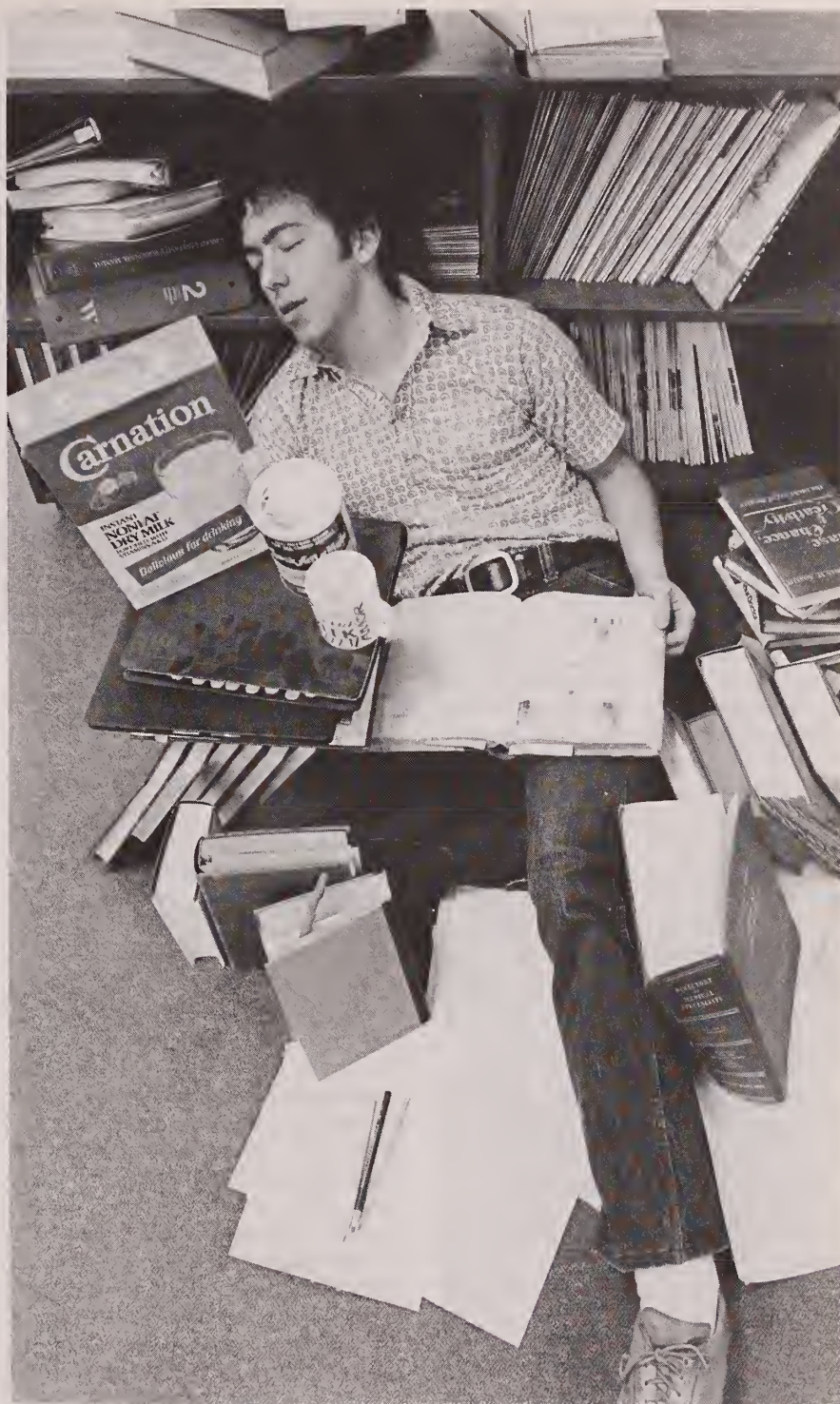
The optimal size of the medical student body depends upon the size of the faculty and the nature of its professional commitments, preclinical teaching and laboratory space, clinical facilities, student morale, and perceived national needs.

Harvard has the largest medical school faculty in the country and the lowest undergraduate medical student to faculty ratio. But its commitments to research, patient care, graduate and postgraduate education, administration, and public service press upon the time faculty can spend on the instruction of undergraduates. In some courses, students have ample contact with the prominent professors whose names drew many of them to Harvard; in others, senior faculty do not have the time to work with even the current number of students. While the Task Force emphasizes the commitment of the School to the teaching of medical students, it is unlikely that a reallocation of faculty effort substantial enough to support an increased enrollment will occur. Each of the major activities of the faculty contributes to its mission and some to its continued financial viability. None would be easily sacrificed, and excessive dependence on teaching by graduate students and house staff would be the result.

Too large a student body also contributes to low student morale. A finding of the self-study has been the widespread anomie that current students feel. An increase in enrollment could hinder the efforts under discussion to develop closer relations among students and between students and faculty.

For these reasons, the Task Force believes that Harvard cannot expand its enrollment without sacrificing the quality of its medical education. Further, there is no pressing national need to require this sacrifice as a means to multiply the number of physicians. Accordingly, the Task Force recommends maintaining the size of the entering class and the number of transfer students.

Harvard Medical School pro-rates tuition charges for students who withdraw or are dismissed. In the view of the Task Force, this practice is fair and equitable.



X. STUDENT AFFAIRS AND COUNSELING

"Organizations overlap and offer fragmented services because they do not talk to, cooperate or coordinate with each other"



Students who seek academic, personal, or financial assistance encounter a bewildering array of offices, committees, and boards, including the Office of the Registrar, the Student Affairs Office, the Financial Aid Office, the Tutorial Board, the Board of Advisors, the Pre-clinical Promotion Board, the Clinical Review Board, the HST Promotion Board, the Committee on Examinations, and the Office of the Chairman of the Internship Advisory Committee. Organizations overlap in their responsibilities and offer fragmented services because they do not talk to, cooperate or coordinate with each other. As a general recommendation for improvement, the Task Force points to the critical need to examine the present organization of these services in terms of student needs and institutional goals and to reorganize accordingly as soon as feasible.

Formal responsibility for academic counseling lies with the Board of Advisors, which has significantly improved upon previous counseling efforts. Some advisors have recognized their students' need to be guided through Harvard's elective curriculum and have taken an active counseling role. Others, unavailable for advice, reduce their role to signing study cards. Even well-intentioned advisors must be better informed about the extensive curriculum, the resource people available in other

disciplines, and the divisions of authority for academic affairs. Students, dissatisfied but reluctant to change their advisors, have sought advice instead from the Office of the Registrar or from first year tutors. The Task Force recommends the publication of a handbook that could inform students and faculty about sources of academic counseling. The Task Force also notes the need to strengthen communications between the Board of Advisors and other student support organizations.

The few students in serious academic trouble face a cumbersome review of their problems. The Preclinical Promotion Board, the Clinical Review Board, the Board of Advisors, and the Office of Student Affairs share this responsibility. The Task Force recommends consideration of a single board to review student promotion in each of the four years as well as to recommend the awarding of the M.D. degree. This board should have specific and well-defined relationships with the other student support offices.

The basic grading system of "Excellent-Satisfactory-Unsatisfactory" appears to satisfy the need for com-

parative evaluation of students without feeding competition. Many students and faculty do object, however, to the uneven application of these standards. Instructors in many of the major courses do not exercise their option to use "Excellent." This omission makes it difficult to develop objective criteria for the election of students to AOA and has contributed to the decision to discontinue awarding the M.D. degree with general honors. Most important, it complicates the task of writing and evaluating internship letters. Some faculty have noted that residency programs outside Harvard have difficulty interpreting glowing descriptions of student performances coupled with "Satisfactory" grades. The Task Force favors the adoption of a uniform standard of grading and the use of "Excellent" on a standardized basis.

Many clinical clerkships and elective courses supplement grades with narrative evaluations. The Task Force supports the use of descriptive evaluations, and encourages, wherever possible, verbal evaluations during a course that will help students correct deficiencies.

The Chairman of the Internship Advisory Committee now prepares all letters of recommendation for graduating students with information from as many sources as possible. The preparation of the letters by one person works toward uniform standards, but their quality ultimately depends on the quality of each student's evaluations. The Task Force notes that uniformly applied grades should strengthen these letters.

The Office of Student Affairs has the primary responsibility for personal counseling of students; however, they also receive help in varying degrees from the Board of Advisors, the Chairman of the Internship Advisory Committee, the Registrar, and first year tutors. Again, coordination and communication need improvement. While the Student Affairs Office is committed to meeting the personal counseling needs of students, it is understaffed and its focus is too limited to emergencies. At a minimum, it needs more counselors and strong, full-time direction.

The student health program appears to be adequate. The addition of a psychiatrist, part or full-time, could aid in handling the number of requests for psychological counseling. The Task Force believes that it would be helpful to remind students of the availability of counseling services in Cambridge. Further, the Task Force recommends that the Health Service stress the voluntary nature of the initial psychiatric interview for first year students.

The Office of Financial Aid administers loans and scholarship support. Approximately 60% of students receive aid and the average indebtedness at graduation is approaching \$20,000. In 1973-74, the Medical School made a decision to hold scholarship support roughly constant, with the balance of funds to come from loans. The financial aid program is adequate only if one accepts the consequences of a large cumulative debt upon students' career plans. The levels of interest charged are notably fair; indeed, repayment demands are set below a maximum percentage of current income, so that physicians in training or low-paid positions are not overburdened.

The Task Force recommends that the Dean for Students and Alumni undertake a review of the conduct and supervision of the financial aid program including the size of the staff. Students have complained of inefficiency, delays in receipt of promised aid, insensitivity, and lack of staff accountability. The Task Force also recommends that the Committee on Financial Aid play a more active role in monitoring the office's performance.

XI. CURRICULUM

"The curriculum remains heavily oriented toward pathophysiology and disease in individual patients"

The Task Force evaluated the quality of the academic preparation in relation to student performance on the National Boards, residency matching results, a poll of Harvard department heads, and student comments on course evaluations and in an open meeting. The Task Force concludes that Harvard's faculty provide an adequate series of learning experiences for medical students, but suggests that certain areas of the curriculum need strengthening.

Overall, the scholastic achievement and preparation for graduate medical education appear to be good. The average total scores of Harvard students on Parts I and II of the National Boards have remained consistently above the national average, and students have performed particularly well on the physiology and biochemistry sections of Part I and the medicine and preventive

medicine/public health sections of Part II. Residency programs in Harvard hospitals have had sufficient confidence in the School's graduates to select more than 300 of them for first year residencies during the past five years. Other preeminent medical centers, such as Presbyterian, Stanford, and University of California hospitals, have chosen many residents from Harvard.

The performance of Harvard students on Part I of the National Boards in 1976 and 1977 indicates improvements in their basic science training since the adoption of major curricular changes in 1974. Scores in anatomy, biochemistry, microbiology, and pharmacology have risen from their 1975 lows. The chiefs of the clinical departments have expressed general satisfaction with the preparation of students entering clerkships, even though the heads of preclinical departments still voice some uneasiness about the extent of basic science training. The preclinical faculty note



with disappointment that many advanced electives in the basic sciences are undersubscribed.

The students' preparation falls short of faculty standards in several major areas of medical practice: psychiatry and behavioral sciences, human sexuality and reproduction, and social and preventive medicine. Psychiatry department heads are unanimous in their opinion that students fail to receive adequate grounding in the behavioral sciences or sufficient emphasis on psychiatry in the

"Introduction to Clinical Medicine." Further, less than three-quarters of the class of 1978 have chosen to take the core clerkship in psychiatry. National Board scores in behavioral sciences and psychiatry, one possible indicator of a problem, have declined to the national average. To improve training in the study of human behavior, the departments of psychiatry recommend a required clerkship in psychiatry and closer collaboration with other medical specialties in course offerings.

Students and faculty have also noted weaknesses in course work related to human sexuality and reproduction. Reproductive physiology, no longer included in the introductory physiology course, is offered during the block elective time in competition with behavioral science courses. Both the reproductive pathophysiology course and the core clerkship in obstetrics/gynecology must compensate for gaps in student preparation, and their design has been subject to reevaluation. National Board scores in obstetrics/gynecology have hovered around the national average for five years. Like psychiatry, this clerkship has enrolled less than 80% of recent classes. Thus, Harvard students who fail to take these two clerkships may largely avoid the study of human sexuality. To help correct some of these weaknesses, the department of obstetrics and gynecology recommends greater integration of the curriculum in reproductive biology and an increase in time allotted to its study.

The Task Force observes that the curriculum for most students remains heavily oriented toward pathophysiology and disease in individual patients. In addition to their often inadequate preparation in human behavior and reproduction, students may graduate from Harvard with little or no formal study in nutrition, preventive medicine, epidemiology and biostatistics, health care economics or sociology, health policy, decision making and medical ethics. Courses available in these areas have not competed favorably against basic science courses for the elective time of medical students. Faculty attitudes, the content of the National Boards, and the quality of the electives themselves all influence student decisions. The Task Force notes that pressure continues for more teaching time in pathophysiology and clinical sciences in the face of the clear need for adequate student preparation in social and preventive medicine and public health.

The Task Force recommends no specific changes in the current elective curriculum, but instead stresses the need for Harvard to devise ways to correct weaknesses in the curriculum without overhauling its basic structure. At present, the Curriculum Committee





does not enjoy the confidence of many students and faculty who believe that it neither represents nor communicates with them. On the one hand, it is criticized for failing to respond to complaints about "minor" scheduling conflicts. On the other, its "housekeeping" functions appear to interfere with its responsibilities for evaluation and curriculum development. The Task Force recommends a critical review of the purpose and modes of operation of the committee, with attention to current department and faculty prerogatives.

A full education depends not only on the structure and extent of the curriculum, but also upon the quality of instruction. Individual departments exercise great independence in designing and teaching courses; the Curriculum Committee receives little invitation to monitor teaching techniques, subject material, or overall workload for students. Consequently, there are no consistent data by which to analyze the effectiveness of

teaching. According to anecdotes, time constraints on preclinical courses have not prevented unplanned repetition of material; one class learned the lipid layer model of membrane in seven courses. The Task Force realizes, however, that the "appropriate" amount of repetition is difficult to assess because it depends upon the aptitude and preparation of students, the talent and creativity of professors, the practical applications for the material and competing demands for time. Although there are little data on the range of time that individual first and second year students actually spend in lectures, laboratories and conferences, student comments indicate a heavy burden of work in pathophysiology in the second year.

As for the clerkships, without universal evaluation results the Task Force concludes that the amount of scut work does not pose a problem. Indeed, many students complain that they must compete with residents to perform proce-

dures and work-ups. More serious threats to learning in the hospital include overemphasis on journal reading at the expense of studying the standard textbooks, uneven teaching by house staff, lack of exposure to senior clinical faculty, and use of students' insecurity and competitiveness to motivate performance.

A Committee on the Evaluation of Medical Education (the Abelmann Committee) reviewed criticism of teaching in clinical courses and made recommendations to the faculty in 1977 for improvements relevant to all levels of medical education. The findings of the Task Force support the more detailed conclusions of the Abelmann Report. A clear statement of the objectives and a summary of the content of each course would allow both students and faculty to evaluate their progress. Periodic external audits of courses should review format, quality of teaching, and teaching resources, and a mechanism should be devised to assure revisions of

courses repeatedly found wanting. To give them force, appointment and promotion committees should give consideration to teaching ability in their decisions.

In view of the need for expertise in evaluation techniques and teaching skills, the Task Force supports the suggestion of the Abelman Report for a trial liaison with the University's Office of Instructional Research and Evaluation and the Center for Teaching and Learning. Although some pilot evaluations of clerkships have taken place, the Task Force notes that full implementation of the report's recommendations will require both financial support and modifications in procedures for faculty promotion. The Task Force recommends that the School make these necessary commitments.

Harvard has little data on the quality of the performance of its graduates. Responses to alumni surveys, validated by a review of the Directory of Medical Specialists, indicate that three-quarters or more of the classes of 1950-52 and 1960-62 are diplomates of specialty boards. Further, more Harvard graduates hold faculty positions in medical schools than alumni of any other school. At the least, this data attests to the commitment of Harvard graduates to continue their medical education, to contribute to the education of others, and to pursue excellence in the delivery of care.

The trends in specialty distribution of Harvard graduates appear to reflect national experience. Alumni surveys show movement toward internal medicine during recent years, from 31.9% of the members of the classes of 1960-62 responding, to 38.2% of the classes of 1967-69. During the same period, the number of graduates in surgical specialties dropped from 23.4% to 16.2%, with the greatest decline in general surgery.

XII. CONTINUING MEDICAL EDUCATION

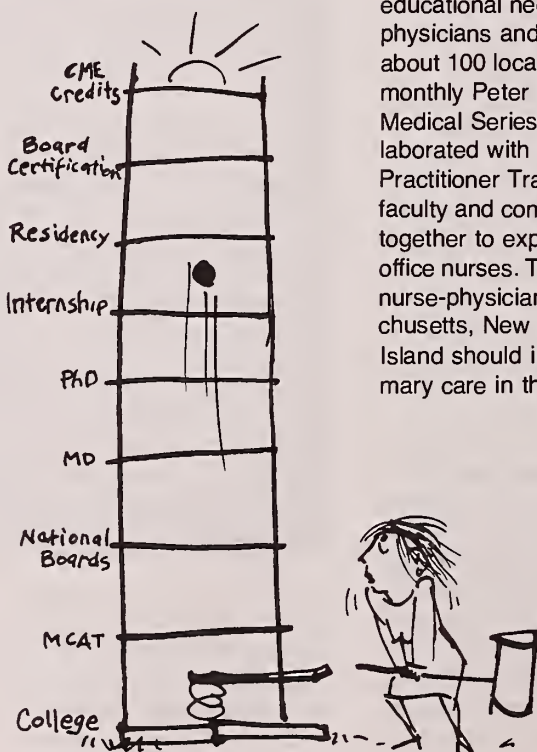
"Harvard runs a variety of formal courses on topics of interest to the primary care practitioner"

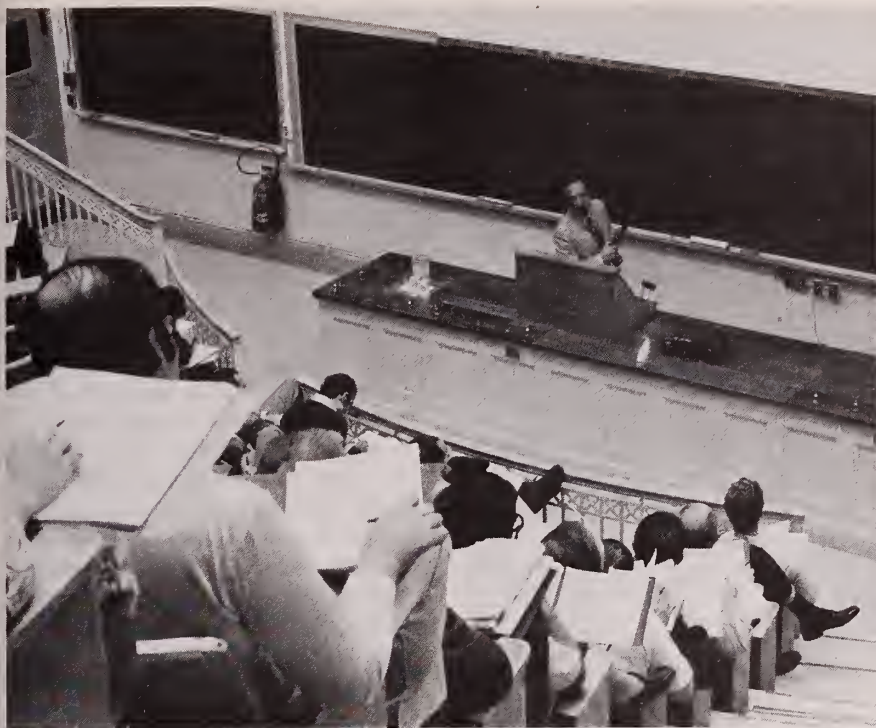
Harvard offers the practicing physician an extensive series of postgraduate courses developed by its faculty and coordinated by the department of continuing education. Of the 89 offerings in 1976-77, many reviewed basic concepts in medicine, such as advances in the treatment of stroke; others presented recent advances in specialized

fields, such as diagnostic ultrasound; and still others acquainted physicians with fields related to but often neglected by medicine, such as the symposium on death and grief. Together, these course offerings attracted more than 10,000 participants from 50 states and 26 foreign countries.

To prevent unnecessary duplication of programs, the Task Force encourages the Medical School to strengthen its efforts at coordination among the affiliated departments. The Task Force also suggests cooperation with other Harvard faculties to promote postgraduate education in less popular fields, such as statistics, epidemiology, health economics, health care organization and administration. Besides those for the average practitioner, HMS has the resources to undertake courses — especially in administration and medical education — for medical school deans and faculty. The department of continuing education has begun to explore courses in teaching medicine with two such offerings last year.

Harvard currently runs a variety of formal courses on topics of interest to the primary care practitioner, such as "Infectious Diseases in Adults" and "Diabetes Mellitus in Relation to General Medicine." Programs in eleven community hospitals respond to the educational needs of local primary care physicians and specialists. Further, about 100 local practitioners attend the monthly Peter Bent Brigham Hospital Medical Series. Harvard has also collaborated with the MGH Adult Nurse Practitioner Training Program in which faculty and community physicians work together to expand the competence of office nurses. The training of nearly 200 nurse-physician teams from Massachusetts, New Hampshire and Rhode Island should improve delivery of primary care in their communities.





XIII. GRADUATE EDUCATION

"Graduate students often do not receive broad training outside their own disciplines"

The Faculty of Arts and Sciences and the Faculty of Medicine share responsibility for the education of graduate students in the sciences basic to medicine. It is the prerogative of the Faculty of Arts and Sciences to award the M.A. and Ph.D. degrees, and that faculty oversees the selection and training of graduate students enrolled in its Division of Medical Sciences. The Division is an administrative office, without appointing power, which offers the Faculty of Arts and Sciences the means to call upon the resources of HMS for graduate study in anatomy, biological chemistry, microbiology and molecular genetics, neurobiology, pathology, pharmacology, cell and developmental biology, and immunology.

Graduate education includes the training of more than 600 postdoctoral fellows, two-thirds of whom are based in the hospitals. Working with faculty preceptors, they make major contributions to investigations in the basic and clinical sciences and occasionally assume teaching responsibilities. In view of their importance to the School's scholarly activities, Harvard must direct increasing attention to the problems of their special status. The current review of appointments to associate status is a first step, but the School must go on to consider other issues, such as the implications of reduced Federal support for postdoctoral research and training and the role of postdoctoral appointments in the academic careers of women and minorities.

Evaluation of teaching and physician behavior is a pressing concern to continuing education programs in their quality assurance role. Harvard has begun to go beyond standard course evaluation questionnaires to self-reports of changes in physician behavior. The Task Force recommends that the department of continuing education extend and strengthen its work in evaluation by adding to its staff a physician/educator qualified to conduct such investigations. This staff member could serve as a resource to other efforts in the evaluation of teaching at HMS.

Continuing education courses have made increasing use of self-instruction by computer. Some sophisticated self-teaching programs allow the physician to experiment with the effects of different diagnostic tests and modes of treatment without, of course, endangering a live patient. The Task Force urges the establishment of a Medical School committee to explore the promise of the computer for teaching at all levels.

The department of continuing education includes in its mission health education of the lay public through publication of a monthly edition of *The Harvard Medical School Health Letter* designed to provide timely and accurate information. Such a newsletter is an effective way to

inform the public without overburdening the resources for continuing education of physicians.

The Task Force found that the administrative support for the various continuing education programs was generally good. Some course directors would prefer more help in publicizing courses and making hotel arrangements. The Task Force endorses the need for staff and space to house participants and suggests that the Medical School investigate the possibility of a geographic center for continuing medical education, with lecture halls and administrative space.

Nevertheless, the Task Force expresses concern that rapid growth in this area could compete with the commitment of the faculty to undergraduate medical education. Two forces may promote a substantial increase in faculty time devoted to CME. First, the government and the profession continue to establish new requirements for specialty certification and licensure. Second, the investment of faculty time produces revenue for departments with otherwise limited resources. The Task Force, therefore, recommends that HMS look ahead to study the impact of continuing medical education on its other academic programs.



In Harvard Yard

The association between graduate and medical education on the Quadrangle improves both programs, but shows some weaknesses. By offering faculty the opportunity to teach and work with graduate students, the Medical School attracts and retains distinguished investigators and teachers in the basic sciences. The excellence and diversity of the scholarly work of the basic science faculty not only offer a productive environment for graduate study and research, but also enrich the preclinical curriculum for medical students. The high ratio of basic science faculty to students allows them to work closely together. The basic science departments have attracted students who achieve excellent records in graduate study and later in faculty positions at highly regarded medical schools and research universities. They contribute directly to medical education by leading discussions and laboratory sessions. In return, the Medical School offers them the opportunity and can secure the necessary resources for the study of problems of human health.

The M.D.-Ph.D. program has exploited the assets of both graduate and medical education through its combination of intensive scientific training and clinical experience. Yet, medical and graduate students often fail to see the mutuality of purpose. In evaluations of their preclinical courses, medical students often comment that the research interests of faculty and teaching assistants dominate course content to the exclusion of discussions of applications to human health. Further, few medical students return to advanced basic science courses after they begin clinical training.

Graduate students often do not receive broad training in the biomedical sciences outside their own disciplines. Nor do they have ready access to the wealth of academic programs and research facilities in the hospitals or the Graduate School of Arts and Sciences. Even their relations with M.D.-Ph.D. students are limited.

The Task Force has recommended that the Medical School evaluate courses according to their objectives, which would presumably include the conceptual relation between basic and clinical sciences. External monitoring of the

medical curriculum as a whole could reveal opportunities to relate the two kinds of training more closely. The Task Force also recommends the establishment of an oversight or steering committee within the Division of Medical Sciences to review the education of graduate students in the biomedical sciences, including clinical training. This committee would work to develop consistent standards and procedures for graduate programs within the division.

The complicated administrative structure raises continuing questions about the role of the Division of Medical Sciences and the relative responsibilities of the two faculties. Disputes over internal and external authority can prevent or hinder rational planning for enrollments, funding, coordination of degree requirements, and efficient administration.

One example of the strains produced by the administrative structure has been the controversy over the size of first year enrollment. In recent years, the Faculty of Arts and Sciences exercised its authority to limit the division's class size, after consideration of the size and quality of the applicant pool, financial support, and opportunities for future placement. Many members of the Faculty of Medicine argued that a quota of twenty-seven students for seven basic science departments and two degree-granting committees was inadequate to support some graduate programs and underutilized the resources of the School. The division has since negotiated some easing of the restrictions in exchange for accepting responsibility for financial aid to its students. The Task Force notes that the division's resources in the basic science departments and the clinical facilities could support a still larger number of students. Improved publicity by the Graduate School of Arts and Sciences for the division's programs could foster recruitment.

Other issues of concern to the two faculties include the small number of faculty who hold joint appointments and the allocation of tuition money. The Task Force recommends that the role of the University Committee on Biological Sciences be strengthened to address questions that bear upon the improved



integration of the Division of Medical Sciences within Harvard University.

The administrative structure of the division also produces internal strains due to a lack of centralized authority. One symptom is low morale among graduate students who feel that their programs lack cohesiveness. The re-

cent appointment of a counselor at the Medical School for division students should help with personal and academic problems. A center for graduate students somewhere in the medical area, and a seminar series directed to their own or faculty research interests could boost morale.



XIV. GRADUATE MEDICAL EDUCATION

“Nearly all of the more than 1200 residents work with the medical students”

Harvard Medical School engages in graduate medical education through its clinical faculty, who structure and fund residency programs largely to meet patient care needs. In their dual role in the administration of hospital and Medical School departments, they select residents who then receive Harvard appointments as clinical fellows. As educators, they instruct house officers and delegate to them certain responsibilities for teaching medical students.

Although faculty members retain primary responsibility for teaching, a chief of service may rely heavily upon house staff and postdoctoral fellows. The extent of house staff participation in teaching varies widely by service, but nearly all of the more than 1200 residents work with medical students during the academic year. In some services, a third year resident, assigned to a teaching rotation for one or two months, orients students, conducts daily didactic sessions, organizes teaching conferences to highlight major problems in the specialty, and helps to evaluate students. Generally, students are assigned to one or two residents in an apprentice-preceptor relationship that should benefit both parties.

Because Harvard departments have practiced no consistent method of evaluation for clerkships, the Task Force cannot single out services for outstanding or substandard teaching. House staff in some specialties receive high marks for their interest and ability,

and some students report that they learned more from their residents than from faculty. In other services, students indicate that house staff appear more interested in their own or patients' problems. The attitudes of the chiefs of services and the chief residents shape the expectations for teaching by house officers on their services. Acknowledging the important role of house staff in undergraduate medical education, the Task Force recommends that systematic evaluation of clerkships assess their efforts as well as those of the faculty.

Two interlocking committees are currently studying graduate medical education. One faculty committee collects and analyzes information on residency programs necessary to respond to the requirements of the Health Professions Educational Assistance Act. This committee has surveyed for the first time the number of Harvard-affiliated

residency programs in each specialty, their location and size, and the demographic characteristics of their trainees. There are currently 66 residency programs in 31 disciplines. Of the 243 first-year residents, 136 are in the primary care specialties of family practice, internal medicine and pediatrics. Even after adjustments for “drop-outs,” Harvard's proportion of first-year residents is 53.5%, far in excess of current legislative requirements. Analyses of the characteristics of trainees by program and specialty are underway.

A second committee has begun to develop procedures for the evaluation of residency programs. Its membership includes trustees, directors, and faculty from the hospitals of the Harvard Medical Center. The goals of the programs, their size in relation to educational goals and service needs, the characteristics of applicants and trainees, and



the career paths of graduates would be reviewed. A draft evaluation questionnaire is under discussion.

Over time these committees should be able to sketch trends in Harvard residency programs; but their preliminary discussions offer some basis for prediction. Federal manpower policy and hospital cost containment programs will place pressure on HMS to combine the resources of some residencies, to look carefully at those of lesser quality, and to reduce programs in specialties outside the definition of primary care. Harvard's preeminent position as a source of academic physicians should offer some protection against a national drive to cut training in certain specialties; nonetheless, the trend over the next few years will be to level off or decrease the size of the subspecialty training programs which have proliferated at the Medical School.

The Task Force concludes that HMS has a moral and pedagogical responsibility to increase its role in the planning and conduct of graduate medical education.

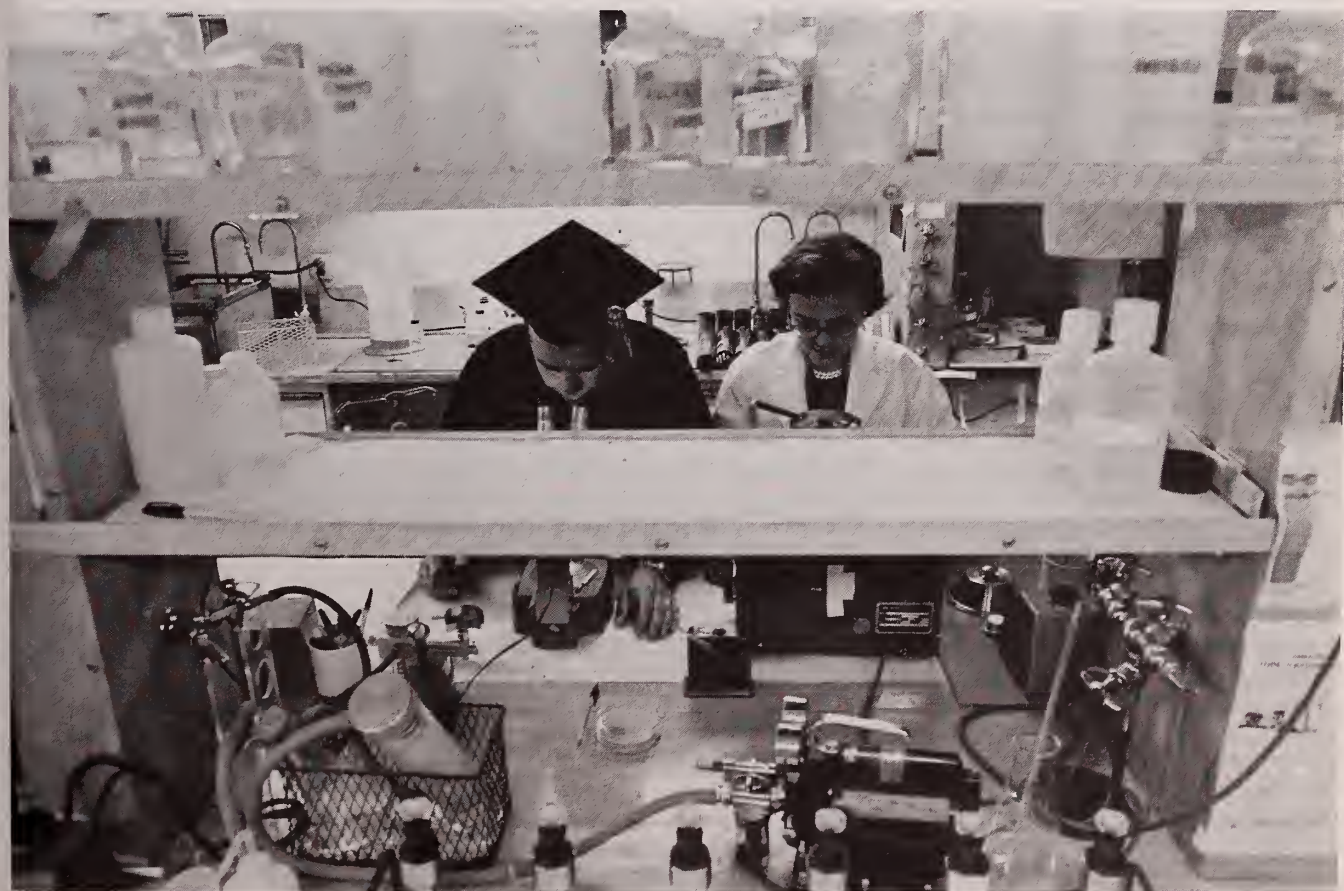
XV. DEPARTMENTS: BASIC SCIENCE

"The basic science and clinical departments have often failed to develop clinical applications of research"

The objectives of Harvard Medical School do not divide neatly into the domain of the basic science faculty and that of the clinical faculty. The basic science faculty does, however, bear

special responsibility for the conduct of investigations into the fundamental properties of living organisms and for the training of students in the scientific method.

The basic science departments have shown both vigor and ingenuity in their scholarly work. Panels of outside experts, reviewing the strengths and weaknesses, have emphasized the outstanding research contributions of the faculty, particularly the unusual strengths of anatomy in electron microscopy, of microbiology in molecular genetics and bacterial physiology, and of neurobiology in studies of dissociated nerve cells and simple neuronal systems. The success of departments in funding by peer review is one rough indication of the talent and creative investigations of their faculty. Biological chemistry relies upon the Medical School for only one-fifth of its funding and all but one Quadrangle department, preventive and social medicine, raise more than half their budgets without assistance from the University.



Outside reviews, however, have also indicated that the basic science and clinical departments have often failed to take advantage of their combined resources to develop clinical applications of research in the medical sciences. For instance, external review committees have encouraged a broadening of faculty interests in infectious diseases within the department of microbiology and in clinical neurology within the department of neurobiology. Similarly, faculty work in human and mammalian cell genetics would strengthen investigations related to human inherited disorders. Quadrangle departments with clinical faculty have had varying success in bridging the geographical and scholarly distance between basic science and clinical medicine. The department of pharmacology, which has developed a mission in cellular and molecular pharmacology, has not yet achieved full cooperation with the clinical pharmacology programs. In pathology, the hospital-based components of the unified department have flourished and the Quadrangle-based component has developed a strong program in basic research and graduate education, including active participation in the committees on immunology and cell biology.

The continued development of joint research programs between basic science and clinical faculty should also serve to strengthen the undergraduate medical curriculum. Collaborative teaching efforts that grow out of shared research interests should help both faculty and students to relate the basic sciences to clinical medicine and should improve already strong teaching programs on the Quadrangle. The special commitment of the senior faculty in physiology to undergraduate medical education is particularly noteworthy, as is the active participation of the neurobiology faculty in the curriculum of the Faculty of Arts and Sciences.

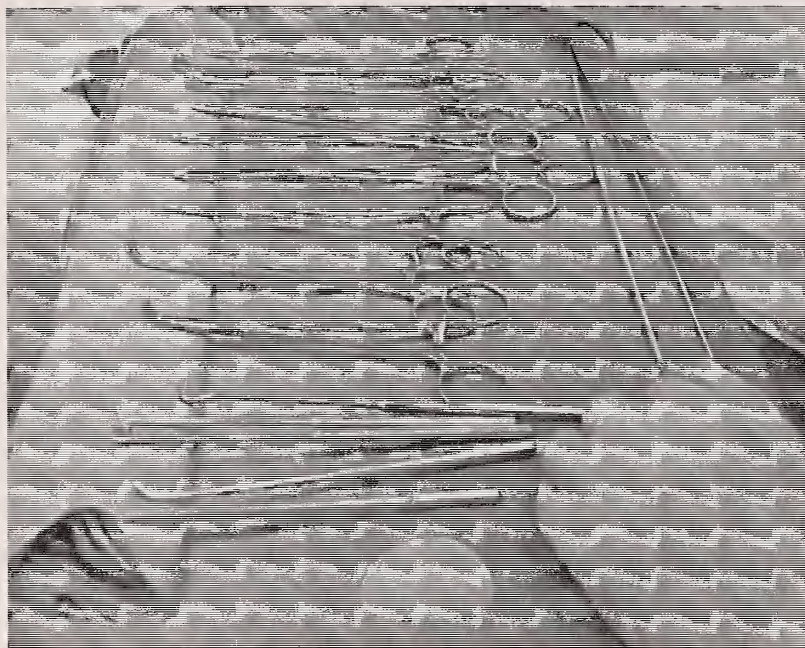
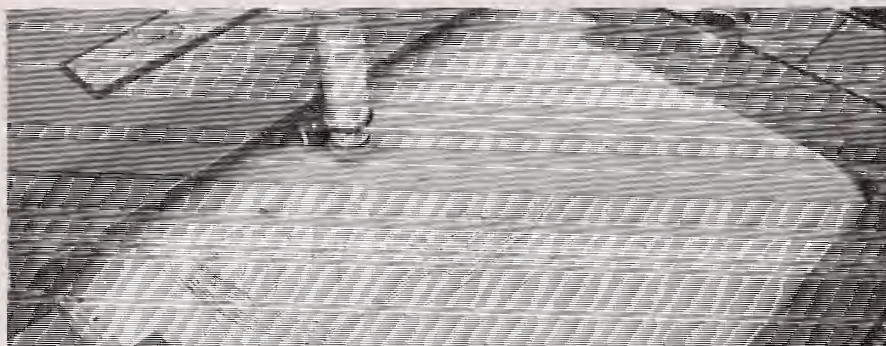
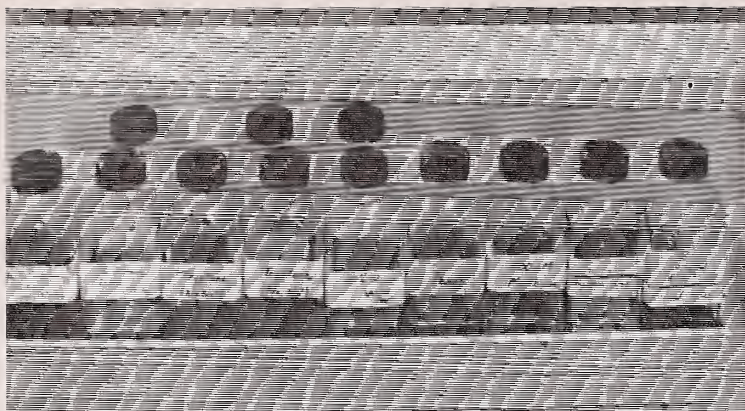
Two Quadrangle departments, pharmacology and preventive and social medicine, lack faculty needed to build strong research and teaching programs. The Task Force applauds the recovery of the department of pharmacology since 1971, but notes that it would benefit from more than one tenured full-time faculty member. The selection of a new chairperson for



preventive and social medicine and a review of its relations with the School of Public Health and the Faculty of Arts and Sciences should help to define the department's mission.

Issues of governance still need to be resolved in three basic science departments. External reviewers have concluded that rotating chairmanships in

microbiology and physiology have not resulted in strong leadership or a well-defined course of action for faculty development. Biological chemistry must overcome an internal conflict between faculty housed in the Quadrangle and in the hospitals. The Task Force notes that the Medical School plans to appoint new chairpersons in these departments on a permanent basis.



decades, the departments of medicine have built enormous breadth in both clinical and basic sciences, to the extent that the School depends very much on their expertise for teaching and training outside the discipline of internal medicine. The Task Force commends their achievements, but cautions that the size and importance of these departments should not preclude parallel developments in other clinical and basic science departments.

The quality of the clinical faculty is of the first magnitude, and HMS clearly continues to attract scholars of great talent. It is important that medical students, residents, and research fellows have maximum access to these minds. On the average, the clinical faculty devotes ten percent or less of its effort to teaching medical students. The most senior faculty have been forced to curtail their contacts with students, due to the burgeoning of their departments.

The clinical faculty generally spends about twice as much time on the graduate education of residents and fellows as on undergraduate medical education. Although not formally responsible for the large numbers of such trainees, Harvard, nonetheless, contributes to the quality of graduate programs by selecting faculty and, to a lesser extent, by setting academic standards for the appointment of research and clinical fellows. The School should be more aware of its *de facto* responsibility in this type of postgraduate teaching, and should study ways to become involved in graduate medical education through the coordination of residency and research training programs, the setting of standards for candidates and graduates, and the monitoring of training quality. Further, faculty promotions should take into consideration careful evaluation of graduate teaching performance.

The majority of clinical departments are woefully short of classrooms and conference rooms suitable for teaching. In addition, there is a consistent shortage of faculty office space. These needs for facilities, especially for orthopedic surgery, pediatrics, psychiatry, and surgery, will require further attention. The Task Force would encourage the teaching hospitals to set a high priority on the provision of realistic teaching facilities in competition with other demands for space. The Task Force also recommends planning for appropriate expansion of research space, particularly at the Massachusetts Mental Health Center and the Peter Bent Brigham Hospital.

With the opening of the Affiliated Hospitals Center, the Medical School should consider establishing an appointing department in neurology to serve the Boston Hospital for Women, the Peter Bent Brigham and the Robert Breck Brigham hospitals.

Considering that the effort of the clinical faculty is about equally divided among research, teaching, and service functions and that about one-third of the teaching effort is for the instruction of medical students, the Task Force concludes that the School's financial contributions to the clinical departments seem equitable in most cases. □



THE COMMITTEES

1. STEERING COMMITTEE.
2. OBJECTIVES. Dr. Daniel C. Tosteson, Chair
3. ORGANIZATION AND ADMINISTRATION. Dr. Baruj Benacerraf, Chair
4. FACULTY. Dr. Eugene Braunwald, Chair
5. RESOURCES: FINANCES, PLANT, HOUSING. Dr. Miles Shore, Chair
6. RESOURCES: LIBRARY. Dr. Harold Amos, Chair
7. RESOURCES: CLINICAL FACILITIES. Dr. Kenneth Ryan, Chair
8. STUDENT ADMISSIONS; ENROLLMENT. Dr. Torsten Wiesel, Chair
9. STUDENT ACADEMIC AFFAIRS; COUNSELING; FINANCIAL AID. Dr. Paul Russell, Chair
10. CURRICULUM. Dr. William Silen, Chair
11. CONTINUING MEDICAL EDUCATION. Dr. Claude Welch, Chair
12. GRADUATE EDUCATION IN THE SCIENCE BASIC TO MEDICINE. Dr. John Potts, Chair
13. GRADUATE MEDICAL EDUCATION. Dr. Mary Ellen Avery, Chair
14. DEPARTMENTS: BASIC SCIENCE. Dr. K. Frank Austen, Chair; Dr. Kurt Isselbacher, Vice-Chair
15. DEPARTMENTS: CLINICAL. Dr. Baruj Benacerraf, Chair; Dr. S. James Adelstein, Vice-Chair

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- Dr. Daniel C. Tosteson '49, Dean of the Faculty of Medicine, Harvard Medical School (1,2)*
- Dr. Herbert Abrams, Philip H. Cook Professor of Radiology (4,11,15)
- Dr. S. James Adelstein '53, Professor of Radiology (1,5,9,15)
- Dr. Harold Amos, Maude and Lillian Presley Professor of Microbiology and Molecular Genetics (1,2,4,6,9)
- Dr. K. Frank Austen '54, Theodore Bevier Bayles Professor of Medicine (1,7,10,14)
- Dr. Mary Ellen Avery, Thomas Morgan Rotch Professor of Pediatrics (1,10,13)
- Dr. Baruj Benacerraf, George Fabyan Professor of Comparative Pathology (1,3,15)
- Dr. Robert S. Blacklow '59, Associate Dean for Academic Programs, Harvard Medical School; Self-Study Coordinator (1)
- Mr. Chauncey Bowers, Graduate student in the Division of Medical Sciences (6,9,12)
- Dr. Eugene Braunwald, Hersey Professor of the Theory and Practice of Physic (1,2,4)
- Dr. Bernard Davis '40, Adele Lehman Professor of Bacterial Physiology (4,15)
- Dr. Claes Henrik Dohlman, Professor of Ophthalmology (7,11)
- Dr. Leon Eisenberg, Maude and Lillian Presley Professor of Psychiatry (11,14)
- Dr. Lewis Engel, American Cancer Society Professor of Biological Chemistry (4,10,15)
- Dr. Don Fawcett '42, James Stillman Professor of Comparative Anatomy; Hersey Professor of Anatomy (4,14)
- Dr. Daniel Federman '53, Dean for Students and Alumni/ae, Harvard Medical School (1,8,9)
- Dr. Rashi Fein, Professor of Economics of Medicine in the Department of Preventive and Social Medicine (7,15)
- Dr. Thomas Fitzpatrick '45, Edward Wigglesworth Professor of Dermatology (8,15)
- Dr. Irving Goldberg, Gustavus Adolphus Pfeiffer Professor of Pharmacology (6,12,15)
- Dr. Peter Goldman, Maxwell Finland Professor of Clinical Pathology (4,10,14)
- Dr. Harry Greene, Instructor in Medicine — Chief Medical Resident, Peter Bent Brigham Hospital (6,10)

* Numbers denote membership in the Task Force subcommittees listed above.





Mr. Gary Greer, Harvard Medical School student, Class of 1980 (5,6,10)
Dr. Milton Hamolsky '46, Professor of Medicine, Brown University Program in Medicine (4,10,14)
Dr. Elizabeth Hay, Louis Foote Pfeiffer Professor of Embryology (3,12,15)
Dr. Samuel Hellman, Alvan T. and Viola D. Fuller American Cancer Society Professor of Radiation Therapy (2,5,12)
Dr. Herbert Hoover, Clinical Fellow in Surgery — Chief Surgical Resident, Massachusetts General Hospital (7,13)
Dr. Kurt Isselbacher '50, Mallinckrodt Professor of Medicine (3,13,14)
Dr. Aubrey Katz, Instructor in Pediatrics — Chief Resident, Pediatrics, Children's Hospital Medical Center (2,6)
Dr. Dieter Koch-Weser, Associate Professor of Preventive and Social Medicine at Harvard Medical School (6,9,15)
Dr. Roger Kornberg, Assistant Professor of Biological Chemistry (4,12)
Dr. Eric Lister, Clinical Fellow in Psychiatry — Chief Resident, Psychiatric Service, Beth Israel Hospital (7,13)
Dr. Irving London '43A, Professor of Medicine in Harvard University and Massachusetts Institute of Technology (2,10,14)
Dr. William McDermott '42, Cheever Professor of Surgery (7,11)
Mr. Henry C. Meadow, Dean for Finance and Business, Harvard Medical School (1,5)
Dr. Donald Medearis '53, Charles Wilder Professor of Pediatrics (7,11)
Dr. John Nemiah '43B, Professor of Psychiatry (5,8,15)
Dr. Oglesby Paul '42, Director of Admissions, Harvard Medical School (3,15)
Dr. Robert Perlman, Associate Professor of Physiology (2,5,9)
Dr. Alfred Pope '41, Professor of Neuropathology (4,6)
Dr. John Potts, Professor of Medicine (1,12,14)
Dr. Thomas Quigley '33, Clinical Professor of Surgery Emeritus — President Alumni Council (5,15)
Dr. Paul Russell, John Homans Professor of Surgery (1,9,14)
Dr. Kenneth Ryan '52, Kate Macy Ladd Professor of Obstetrics and Gynecology; William Richardson Professor of Obstetrics (1,2,7,13)
Dr. Harold Schuknecht, Walter Augustus Lecompte Professor of Otology and Professor of Laryngology (9,15)
Dr. Eleanor Shore '55, Assistant to the President of Harvard University for Health Affairs
Dr. Miles Shore '54, Bullard Professor of Psychiatry at the Massachusetts Mental Health Center (1,2,5,13)
Dr. William Silen, Johnson and Johnson Professor of Surgery (1,10,13)
Mr. Charles Simonton, Harvard Medical School student, Class of 1979 (1,2,5,9)
Dr. Clement Sledge, Professor of Orthopedic Surgery (2,3,15)
Dr. Thomas Smith '65, Associate Professor of Medicine (3,4,14)
Dr. Leroy Vandam, Professor of Anesthesia (3,8,15)
Ms. Judith Wasserheit, Harvard Medical School student, Class of 1978 (1,3,8,10)
Dr. Claude Wlech '32, Clinical Professor of Surgery Emeritus (1,2,11)
Dr. Torsten Wiesel, Robert Winthrop Professor of Neurobiology (1,2,8,15)
Dr. Thomas Wilson, Professor of Physiology (5,8)
Dr. Mary Ellen Wohl, Assistant Professor of Pediatrics at Children's Hospital Medical Center (2,7,15)

Staff

Ms. Joyce Brinton, Assistant to the Dean for Finance and Business
Ms. Patricia Perry, Special Assistant to the Dean of the Faculty of Medicine for Analysis and Planning
Ms. Eileen Shapiro, Assistant to the Deans for Minorities and Women

THE WILLIAM O. MOSELEY, JR. TRAVELLING FELLOWSHIP

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1. **Already demonstrated their ability to make original contributions to knowledge.**
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3. **Clearly plan to devote themselves to careers in academic medicine and the medical sciences.**
4. **Individuals who have already attained Faculty rank at Harvard or elsewhere will not ordinarily be eligible for these awards.**

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There is no specific due date for the receipt of applications or for the beginning date of Awards except that the Committee requests that applications not be submitted more than 12 months in advance of the requested beginning date and in any event not later than December 31 of any calendar year. The Committee will meet once a year in January to review all applications on file. Applicants will be notified of the decision of the Committee by January 31.

Application forms may be obtained from, and completed applications should be returned to:

SECRETARY, COMMITTEE ON FELLOWSHIPS IN THE MEDICAL SCHOOL
HARVARD MEDICAL SCHOOL
25 SHATTUCK STREET, BOSTON, MASSACHUSETTS 02115

Letters

Under the dome

I have, as an architect, and for architectural reasons, two questions to ask of the medical profession or anyone who reads the *Alumni Bulletin* and knows the answers:

1) Who actually first used ether? We are told, of course, that it was such and such a doctor at the MGH, who later deferred to someone in the South etc., etc. We are also told it was a dentist. Does anyone truly know the answer to this rather important question — honored in the Boston Public Garden in the "Ether Monument"?

2) In giving my course Architecture USA at the New School for Social Research, I was embarrassed by a question from a doctor that I could not answer. I was showing slides of the early and very handsome Pennsylvania Hospital in Philadelphia and I pointed out that the dome on top was the famous "operating theater" — placed there to obtain maximum light (through a skylight). He then said to me why in God's name did they locate it so high up and how did they ever get the patients up there? Interesting thought. Did they have ramps or lash them down and carry them end-up on stretchers — seemingly a most barbaric procedure.

Answers to the above two questions from the profession will be most welcome by this layman.

Alan Burnham

The issue of precedence in the medical use of ether anesthesia was a source of great dispute, personal animosity and even psychological trauma — and one that remains unresolved. The best known claimant is the dentist Dr. William Morton, who successfully demonstrated the use of ether at the Massachusetts General Hospital in 1846, for removal of a neck tumor on a patient of John Collins Warren. Charles

Jackson, a Boston chemist, maintained that it was he who recommended ether to Morton, while the latter insisted that he was merely "a consultant." To further complicate the matter, a Dr. Crawford Long came forward with the unsubstantiated claim that he had employed ether four years earlier in his country town, Danielsville, Georgia. All three men suffered mental and emotional consequences from the ensuing conflict. It was because of this dispute that the Ether Monument was erected, not in honor of a particular individual, but to ether itself. Our information comes from Mr. Alex Gray and Mr. David Gunner, who prepared the Warren Anatomical Museum's exhibit on ether.

Concerning the Pennsylvania Hospital, we consulted Dr. Richard Limoges of that hospital's psychiatry department, a member of the Society of Architectural Historians and of the Philadelphia College of Physicians' section on medical history. He tells us that patients were carried to the operating theatre on sedan chairs, if awake; or strapped to stretchers if unconscious from the administration of alcohol or laudanum. The room was in use from the hospital's completion in 1754, until 1867 — before anesthesia was in general use. After surgery, patients recuperated in a recovery room behind the operating theatre until well enough to descend to other quarters. Dr. Limoges adds that, like the Massachusetts General's Ether Dome, the Pennsylvania Hospital's operating room was built at the top of the structure not only in order to take advantage of the illumination provided by a skylight, but for another reason as well: in this location, the screams emanating from surgery were not within earshot of patients in the rest of the building. Further questions will be answered gladly by Dr. Limoges, Department of Psychiatry, Pennsylvania Hospital, 8th & Spruce Sts., Philadelphia, Pennsylvania 19107. — Ed.

Artists among us

My congratulations to the editors on the splendid issue of the *Harvard Medical Alumni Bulletin*, Artists Among Us. A wish that the editors of technical medical journals could show the same degree of journalistic flair and editorial skill that this issue exhibits.

Lester S. King '32

I enjoyed your "art issue" a great deal but feel I must point out an egregious omission: the satiric cartography of Thomas Wright, formerly Vanderbilt Hall's factotum-in-chief, currently B & G's guiding spirit. His humorous maps of the Harvard Medical area — sprinkled with editorial remarks, historical references, matrimonial bulletins, geographic mockeries, fantasies and distortions — are masterpieces of concept and execution. A priceless sample of these maps adorns the Vanderbilt Hall health services offices for such hermits as are unaware of this oeuvre.

I sincerely trust that this esthetic wrong will be wrighted (sic) in a future issue. The maps are well worth a spread (or even a centerfold fold-out?) if properly photographed.

Thomas G. Gutheil '67

I was delighted to have my own copy of your stunning issue of the *Harvard Medical Alumni Bulletin* devoted to Artists Among Us. It contains material of rare artistic quality — material matching the originality of the idea of publishing such an issue. You are all to be warmly congratulated. Although I don't see many medical alumni magazines, yours must surely be at the top of the list.

Elizabeth H. Thomson
Editor Emeritus
Journal of the History of Medicine and Allied Sciences

